ECO SERIES

User's Guide

ML5520
ML5521
ML5590
ML5591



Preface

Every effort has been made to ensure that the information in this document is complete, accurate, and up-to-date. The manufacturer assumes no responsibility for the results of errors beyond its control. The manufacturer also cannot guarantee that changes in software and equipment made by other manufacturers and referred to in this guide will not affect the applicability of the information in it. Mention of software products manufactured by other companies does not necessarily constitute endorsement by the manufacturer.

While all reasonable efforts have been made to make this document as accurate and helpful as possible, we make no warranty of any kind, expressed or implied, as to the accuracy or completeness of the information contained herein.

The most up-to-date drivers and manuals are available from:
http://www.okiprintingsolutions.com

As an Energy Star Program Participant, the manufacturer has determined that this product meets the Energy Star guidelines for energy efficiency.
Note: Not comply (when employing Network Interface Card).

This product complies with the requirements of the Council Directives 2004/108/EC (EMC), 2006/95/EC (LVD) and 2011/65/EU (ROHS) as amended where applicable on the approximation of the laws of the member states relating to electromagnetic compatibility, low voltage and restriction of hazardous substances.

This product complies with EN55022 Class B. However, when fitted with the optional network interface card, RS-232 C serial interface card or optional cut-sheet feeder, compliance to EN55022 is class A. In a domestic environment this configuration may cause radio interference, in which case the user may be required to take adequate measures.

The following cables were used to evaluate this product to achieve EMC directive 2004/108/EC compliance and configurations other than this may affect that compliance.

CABLE TYPE	LENGTH (METRE)	CORE	SHIELD
Power	1.8	✘	✘
USB	5.0	✘	✔
Serial	1.5	✘	✔
Parallel	5.0	✘	✘
LAN	2.1	✘	✔

Manufacturer

Oki Data Corporation,
4-11-22 Shibaura, Minato-ku,
Tokyo 108-8551,
Japan

Importer to the EU/authorised representative

Oki Europe Limited

Blays House
Wick Road
Egham
Surrey, TW20 0HJ
United Kingdom

For all sales, support and general enquiries contact your local distributor.

Environmental information



CONTENTS

Notes, cautions and warnings

NOTE
A note provides additional information to supplement the main text.

CAUTION!

A caution provides additional information which, if ignored, may result in equipment malfunction or damage.

WARNING!

A warning provides additional information which, if ignored, may result in a risk of personal injury.

For the protection of your product, and in order to ensure that you benefit from its full functionality, this model has been designed to operate only with genuine original ribbon cartridges. Any other ribbon cartridge may not operate at all, even if it is described as "compatible", and if it does work, your product's performance and print quality may be degraded.

Use of non-genuine products may invalidate your warranty.

INTRODUCTION

Congratulations on purchasing this printer!

This printer series is designed to provide highly reliable letter quality printing and high resolution graphics for the desktop/office printing environment. It combines state-of-the-art, 9-pin (ML5520ECO/ML5521ECO) and 24-pin (ML5590ECO/ML5591ECO), serial impact dot matrix printing technology with advanced materials and superior construction to provide high performance and versatility in a desktop sized unit. Careful attention to ergonomics and application needs provides user friendly operation for operators of varying technical capabilities.

ABOUT THIS GUIDE

This manual is your user's guide (check the web site, www.okiprintingsolutions.com, for the most up-to-date version) for your printer and forms part of the overall user support listed below:

> **Installation Safety booklet**: provides information as to safe use of the printer.

This is a paper document that is packaged with the printer and should be read before setting up your printer.

> **Set-up guide**: to describe how to unpack, connect and turn on your printer.

This is a paper document that is packaged with the printer.

> This **User's Guide**: to help you to become familiar with your printer and make the best use of its many features. Also included are guidelines for troubleshooting and maintenance to ensure that it performs at its best.

This is an electronic document stored on the manuals CD.

> **Network Configuration Guide**: to provide detailed technical information for network administrators to configure the optional accessory network interface.

This is an electronic document stored on the CD that accompanies the network interface card optional accessory.

> **On-line Help**: on-line information accessible from the printer driver and utility software.

ON-LINE USAGE

This guide is intended to be read on screen using an Adobe Acrobat Reader. Use the navigation and viewing tools provided in Acrobat.

You can access specific information in two ways:

> In the list of bookmarks down the left hand side of your screen, click on the topic of interest to jump to the required topic. (If the bookmarks are not available, use the "Contents" on page 4.)

> In the list of bookmarks, click on Index to jump to the Index. (If the bookmarks are not available, use the "Contents" on page 4.) Find the term of interest in the alphabetically arranged index and click on the associated page number to jump to the page containing the term.

Printing pages

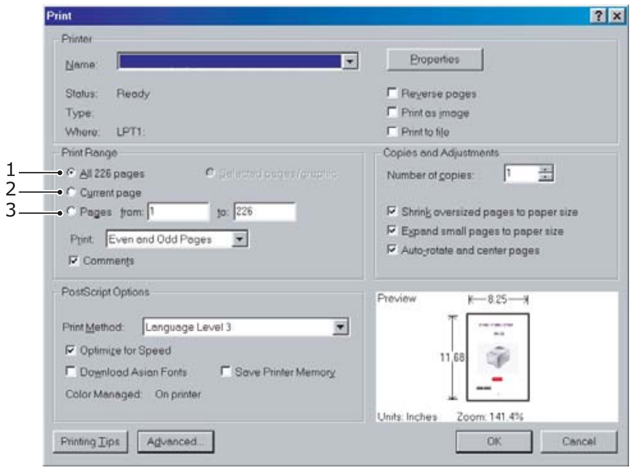
The whole manual, individual pages, or sections may be printed. The procedure is:

1. From the toolbar, select **File**, then **Print** (or press the **Ctrl + P keys**).

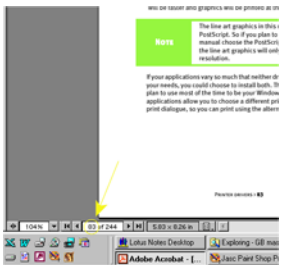
2. Choose which pages you wish to print:

(a) **All pages**, (1), for the entire manual.

(b) **Current page**, (2), for the page at which you are looking.



(c) **Pages from** and **to**, (3), for the range of pages you specify by entering their page numbers.



3. Click on **OK**.

GETTING STARTED

LOCATION

> Place your printer on a firm, solid surface.

> Allow enough space around the printer to easily access the platen knob and the various paper feed paths.

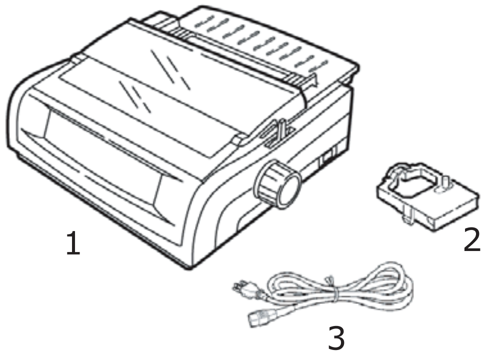
> Make sure a suitable grounded power outlet is available nearby.

UNPACKING

> If any items are missing, contact your dealer immediately.

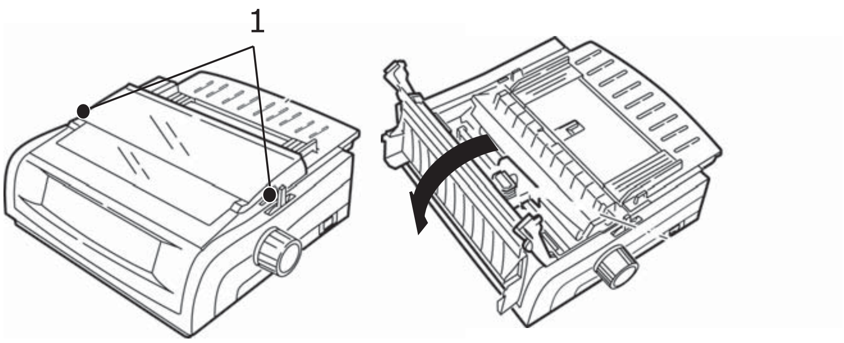
> Keep your packing materials and carton in case you ever need to ship or transport the printer.

> Interface cable and paper are sold separately.

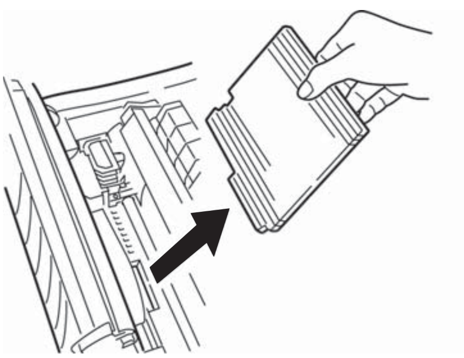


1. Printer
2. Ribbon Cartridge
3. Power Cord

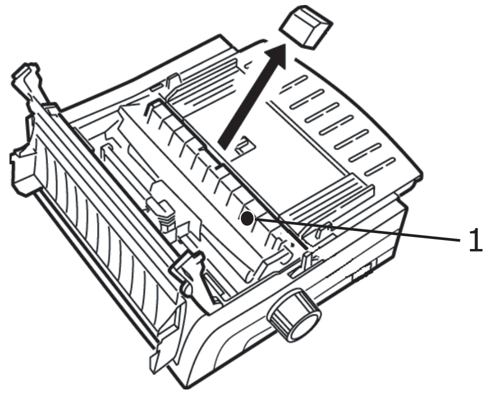
1. Remove any packing tape, then grasp the tabs (1) at either end of the access cover and pivot it towards the front of the printer as far as it will go.



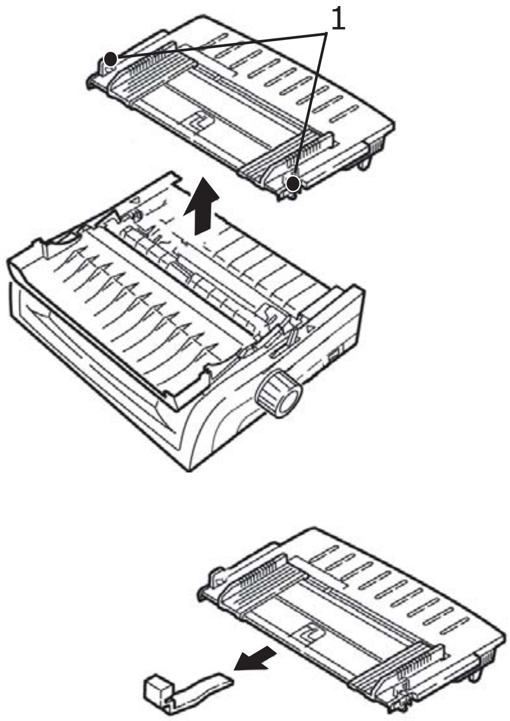
2. Remove the printhead shipping restraint.



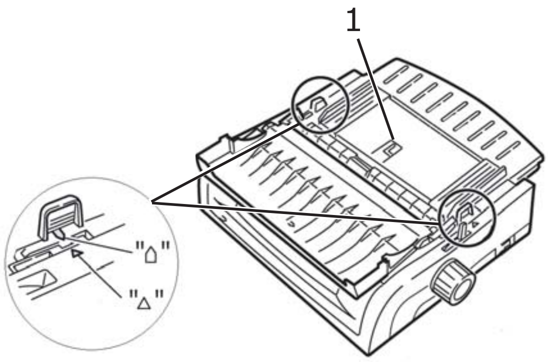
3. Remove the shipping restraint from the pull-up roller assembly (1).



4. Use the tabs (1) to lift and remove the sheet guide, then remove the shipping restraint.



5. Reinstall the sheet guide: insert the clips on either side of the separator into the notches marked with a triangle, then press down to secure the separator in place.



INSTALLING THE RIBBON CARTRIDGE

CAUTION!

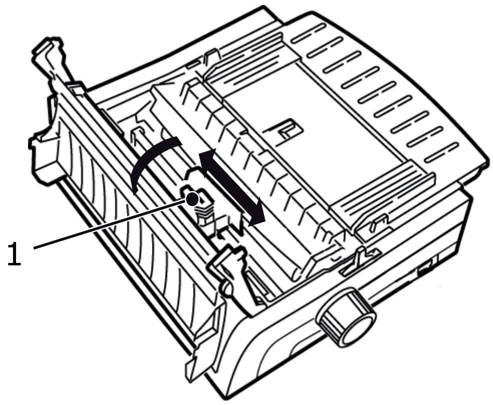
Make sure you have the correct replacement ribbon for your printer. The wrong ribbon will not print when installed in your printer.

RIBBON CARTRIDGE HANDLING

- Leave unused ribbon cartridges in their packages until needed.
- Careful; the ribbon ink may cause permanent stains.
- Ribbon ink on skin or clothing can usually be removed with soap and water.

Make sure the printer is turned OFF.

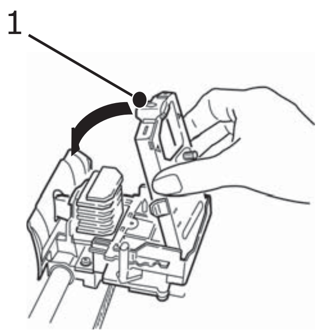
1. Open the access cover and center the printhead (1).



WARNING!

The printhead may be HOT.

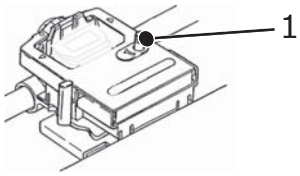
2. Unpack the new ribbon cartridge and install it on the printhead.



CAUTION!

Do not remove the ribbon shield (1) from the ribbon.

3. Turn the take-up knob (1) in the direction of the moulded arrow to take up any ribbon slack.



4. Close the access cover and turn the printer ON.

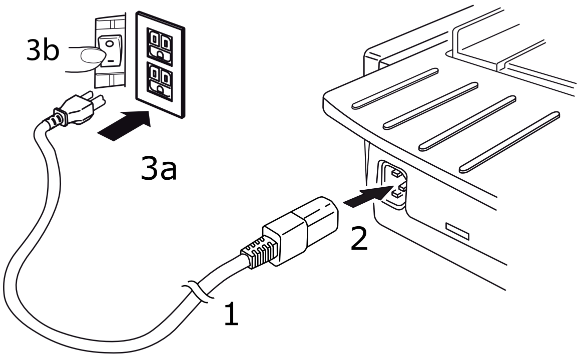
POWERING ON YOUR PRINTER

WARNING!

Operations of this equipment are not warranted when the equipment is connected to UPS (Uninterruptible Power Supply) and/or inverter. Doing so may result in damage of this equipment. Do not use an UPS and/or inverter.

1. Ensure that your printer power switch is set to OFF.

2. Connect the power cable connector (1) to the A/C input (2) on the printer.



3. Connect the power cable to a 220/240 V A/C power outlet (3a) and switch on the outlet power (3b).

WARNING!

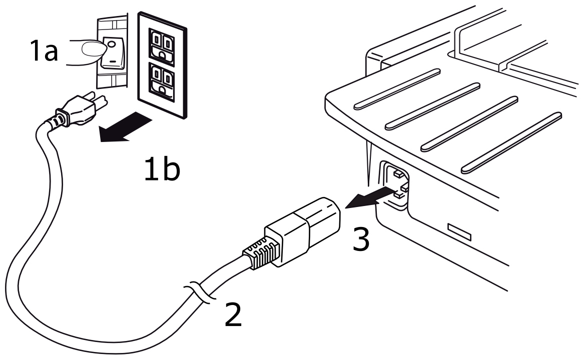
Be careful when inserting a three-pronged A/C plug. Before plugging it in, check the position of the FG terminal. Incorrect insertion may cause damage not only to the printer main body but also peripheral devices and electric shock, smoke and ignition.

4. Turn the printer power switch ON.

5. Check that the power indicator on the control panel illuminates.

Powering off your printer

1. Turn the printer power switch to OFF.
2. Switch off the outlet power (1a) and then unplug from the power outlet (1b).



3. Unplug the power cable connector (2) from the printer (3).

Computer connections

Your printer is equipped with two standard data interfaces.

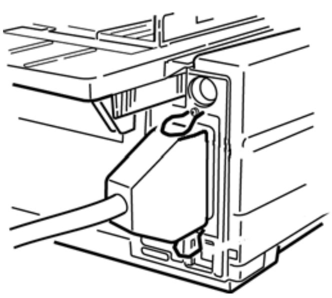
CAUTION!
Under no circumstances attempt to use both the parallel and USB ports simultaneously.

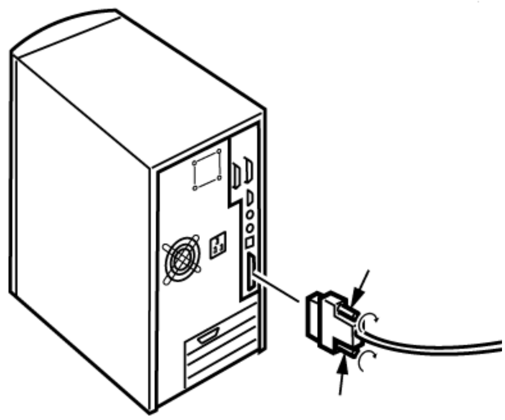
Parallel

> For direct connection to a PC. This port requires a bi-directional (IEEE 1284 compliant parallel cable.

Make sure the printer and computer are both turned OFF.

1. Attach a suitable bi-directional cable to the parallel connector on the back of the printer. Then attach and secure the cable to your computer.





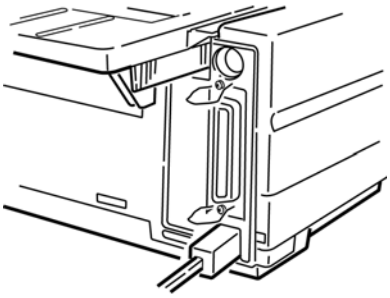
2. Turn the printer and computer back ON.

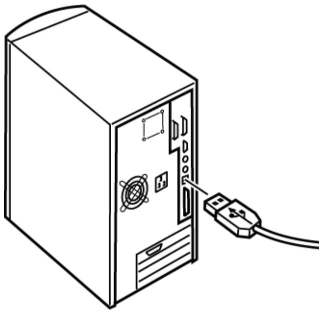
USB

> For connection to a PC running Windows 2000 or above. This port requires a shielded cable 5m long confirming to USB version 2.0.

Make sure the printer and computer are both turned OFF.

1. Attach a suitable USB cable to the printer. Then attach the cable to your computer.





2. Turn the computer and printer back on.

The following interfaces are available as optional accessories and are described in their accompanying installation documentation:

> RS-232 C Serial interface

> 100BASE-TX/10BASE-T network connection

NOTE

> *Refer to the Network Configuration Guide for setting up the network connection.*

> *It is not recommended that you use either the Parallel or USB port when the RS-232 C or Network Interface option is installed in this printer.*

Loading paper

For instructions on loading paper, see "Loading paper" on page 20.

Testing the printer

- Font Sample Test
- Rolling ASCII Test
- Hexadecimal Dump Mode

Font sample test



CAUTION!

Wide carriage model: ML5521ECO/ML5591ECO:

If you are using 8.5 inch paper to run the tests, make sure the paper width selection in the printer menu is set to 8.5 inches. Otherwise, printing on the platen may damage the printer. See "Menu mode" on page 41 for more information.

The Font Sample Test prints a sample of the fonts standard to the printer.

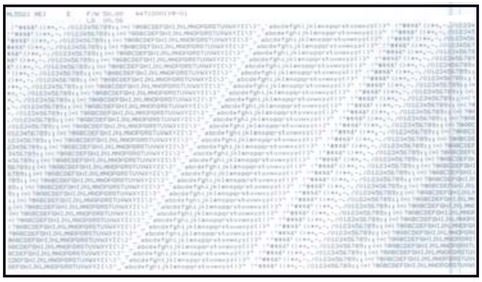
The top of the printout shows the Printer Model, Emulation, Country Code, Interface, and Firmware Revision Level.

Make sure paper is loaded.

1. Turn the printer OFF.
2. Press and hold the LF key while turning the printer back ON.

The printer will print a page of font samples and the test ends.

Rolling ASCII test



CAUTION!

Wide carriage Model ML5521ECO/ML5591ECO:

If you are using 8.5 inch paper to run the tests, make sure the paper width selection in the printer menu is set to 8.5 inches. Otherwise, printing on the platen may damage the printer. See "Menu mode" on page 41 for more information.

The Rolling ASCII Print Test produces a continuous printout of all 96 ASCII characters in a rolling pattern in whatever typeface is selected (ML5521ECO default = Utility; ML5591ECO default = LQ Courier).

The top of the printout shows the Printer Model, Emulation, Country Code, and Firmware Revision Level.

Make sure continuous forms paper is loaded.

1. Turn the printer OFF.
2. Press and hold the QUIET/TOF key while turning the printer back ON. (If the printer comes on without starting the Rolling ASCII test print, you did not hold the QUIET/TOF key long enough.)

   The printer prints the rolling ASCII text continuously.
3. Press SEL to end the test.

Hexadecimal dump mode

When the printer is placed in the Hexadecimal Dump Mode, all data received, including text and printer commands, is printed in both hexadecimal and ASCII format.

For example, the following line of BASIC code

```
LPRINT CHR$ (27);”0”;CHR$ (30);”THIS IS AN EXAMPLE OF A HEXADECIMAL DUMP.”
```

would print like this:

```
1B  30  1E  54  68  69  73  20  69  73  20  61  6E  20  65  78   .0.This is an ex
61  6D  70  6C  65  20  6F  66  20  61  20  68  65  78  61  64   ample of a hexad
65  63  69  6D  61  6C  20  64  75  6D  70  2E  0D  0A           ecimal dump...
```

NOTE
In the ASCII format, all non-printable characters are represented by a period.

To engage the Hexadecimal Dump Mode:

Make sure paper is loaded.

1. Turn the printer OFF.

2. Hold the SEL and FF/LOAD keys for several seconds while turning on the printer.

To exit the Hexadecimal Dump Mode:

1. Press the SEL key.
or
Turn the printer off, then on again.

Printer drivers

The driver for your printer is provided on the CD included with the printer. You can either load the driver or select one of the compatible drivers listed below in your software application.

1. Insert the CD into your CD-ROM drive.

> *NOTE*
> *If the CD does not AutoPlay, click Start > Run > Browse, then browse to your CD-ROM drive, double-click Setup.exe and click OK.*

2. Select your **Language**.

3. Click I agree to accept the terms of the Software Licence Agreement.

4. When the Menu Installer window appears, click the **Install Driver** button.

5. Follow the on-screen instructions.

Emulations

The factory default emulation for your printer is:

MODEL	EMULATION (DEFAULT)
ML5520ECO/ML5521ECO	IBM PPR
ML5590ECO/ML5591ECO	EPSON LQ

If you wish to change to other emulations, see "Changing emulations" on page 40.

Printing from the computer

When printing to your printer from, for example, a Windows application on your computer, make your printing selections from the driver windows that appear on screen. These driver windows have been designed to be easy to use and intuitive while supplementary on-line help is available by clicking each window help button.

Oki DIPUS

The **OKI DIPUS** utility allows you remote access to the printer settings using the available applications. You can access DIPUS from **Start > All Programs > Okidata > OKI DIPUS**.

Controlling the printer using DIPUS

There are four utilities available within **OKI DIPUS**. Each utility provides access to the printer settings from your computer. Using these utilities you can change the button settings, menu settings, top of form settings and also view the current status of the printer. Any changes made can then be uploaded to the printer and it will be saved to the printer as new settings. These utilities are an alternative to the printer operator panel.

Button setup utility

Using this utility you can activate or deactivate buttons on your printer operator panel. Each button and its function is described in a message view.

Menu setup utility

Using this utility you can view and change your printers' Menu settings.

Status monitor

The Status Monitor utility allows you to view your printers' current status for example, On-line, On-line (power saving) and so on. In the event of a printer error occurring, a warning message is also displayed.

TOF setup utility

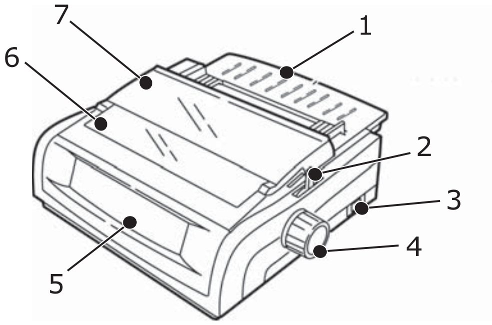
Using this utility you can now set the first line of print (TOF) for each page. This utility allows you to treat each print job individually.

For detailed information on each utility and the different settings contained within, refer to the on-line help, by clicking each window Help button.

USING YOUR PRINTER

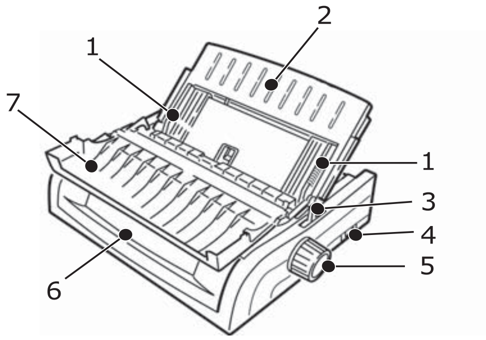
COMPONENTS: REAR FEED (CONTINUOUS FORMS)

The serial number of your printer is on a label fixed to the back of the printer.



1. Sheet Guide
2. Paper Lever
3. ON-OFF Switch
4. Platen Knob
5. Control Panel
6. Acoustic Cover
7. Access Cover

COMPONENTS: TOP FEED (SINGLE SHEETS)



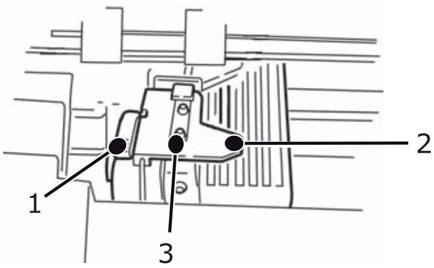
1. Paper Guides
2. Sheet Guide
3. Paper Lever
4. ON-OFF Switch
5. Platen Knob
6. Control Panel
7. Acoustic Cover

NOTE
For single sheet printing, the paper lever must be in the middle position.

LOADING PAPER

REAR FEED

If you have any paper in the paper path, remove it before installing rear feed paper.

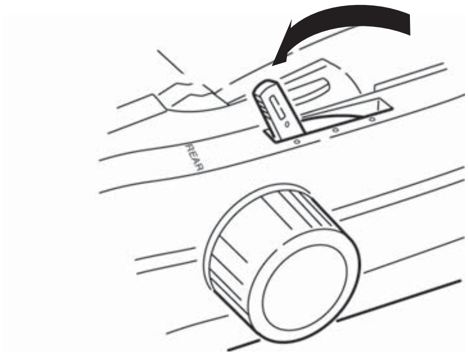


1. Lock Lever
2. Upper Tractor Cover
3. Pins

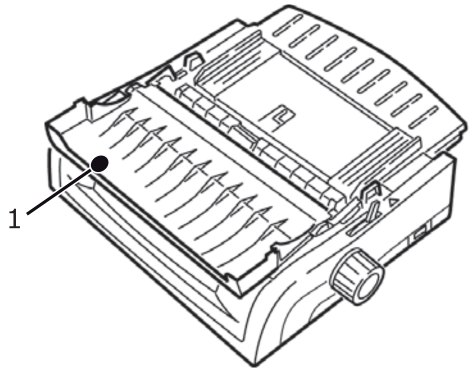
Loading rear feed paper from the back of the printer

These instructions assume you have ready access to the back of the printer. If you do not, go to "Loading rear feed paper from the front of the printer" on page 25.

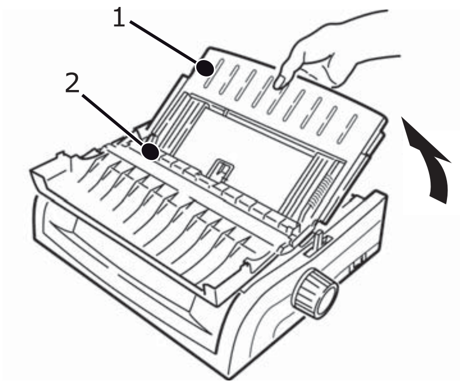
Make sure the paper lever is forward (position marked "REAR").



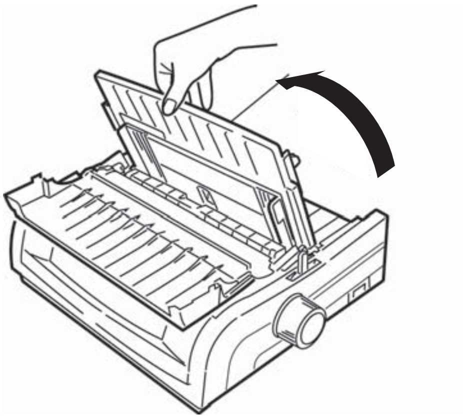
1. Open the access cover (1).



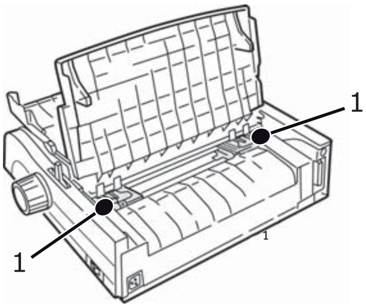
2. Grasp the sheet guide (1). Lift it slightly, then slide it back.



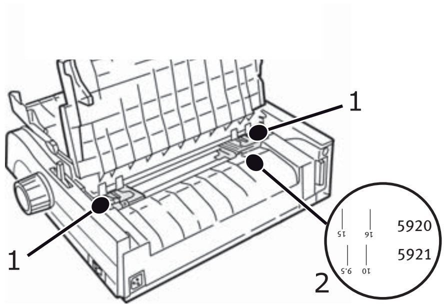
3. Pivot the sheet guide forward and gently rest it against the roller assembly (2). If you push the sheet guide too hard against the roller assembly, it may dislodge it. If it does, be sure to reseat the roller assembly before continuing.



4. From the back of the printer, locate the tractors (1).



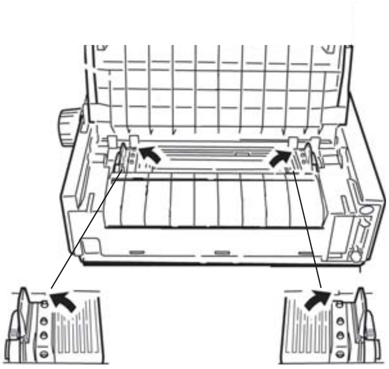
5. Open the lock levers (1) and move the right tractor (as viewed from the back of the printer) to the reference mark (2) matching the width of the paper you are loading. Then close the lock lever on the right tractor:



NOTE
The movement of the right tractor is limited to ensure that the paper covers the paper sensor.

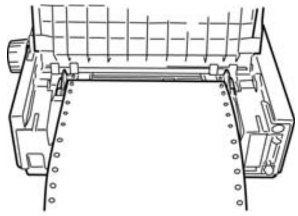
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6. Open the tractor covers.

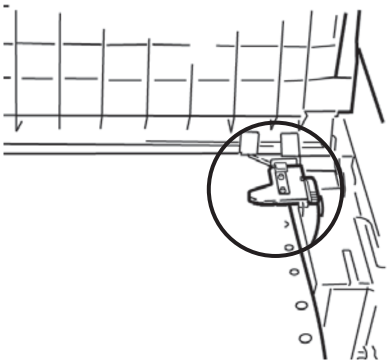


7. Place continuous forms paper on the first two pins of either tractor.

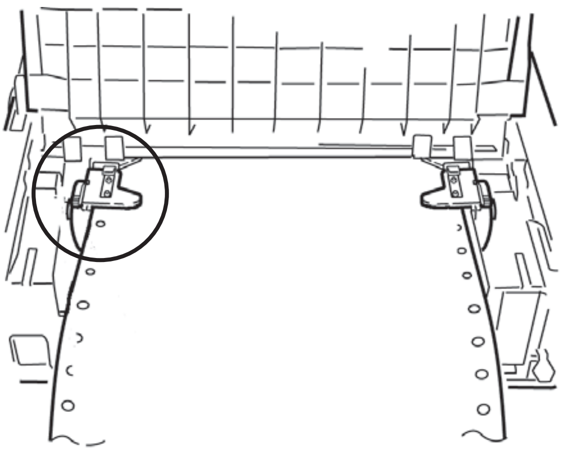
NOTE
You must keep the number of paper holes engaged on either pin the same. If you don't the paper will skew and jam.



8. Close the right tractor cover.



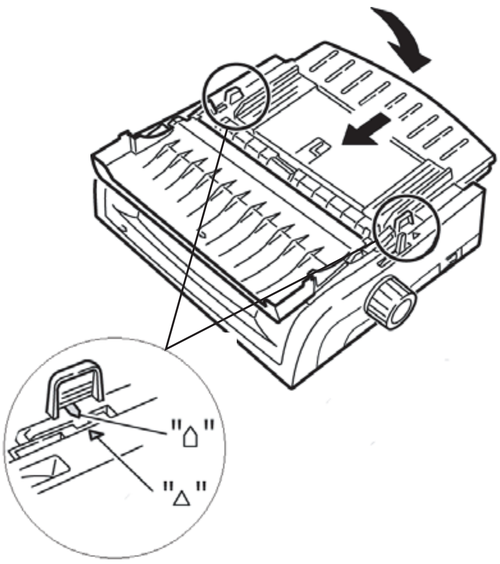
9. Adjust the left tractor until the holes in the paper are centered on the pins then lock the lever and close the left tractor cover.



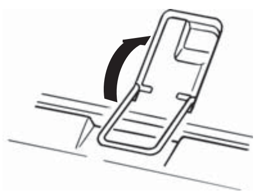
NOTE
If the paper is too loose, or too tight, it can cause jams.

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10. Lower the sheet guide and slide it towards the front of the printer until the marks align.



11. Place the wire guide in the sheet guide on the pull-up roller assembly.

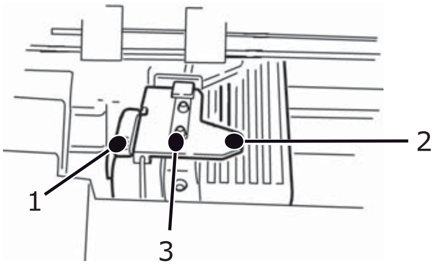


12. Press FF/LOAD.

NOTE
The factory default setting for the Top of Form (where the printing should begin) is 1" down from the top of the page. To change the setting, see "Top of Form (TOF)" in the previous chapter.

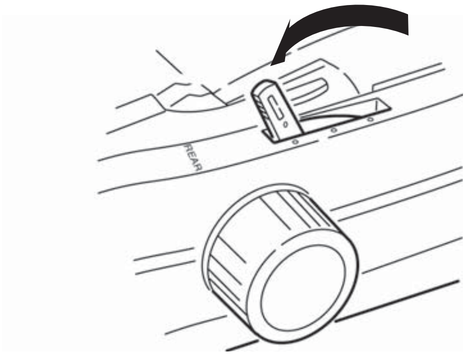
Loading rear feed paper from the front of the printer

These instructions assume you do not have ready access to the back of the printer. If you do, go back to "Loading rear feed paper from the back of the printer" on page 21.

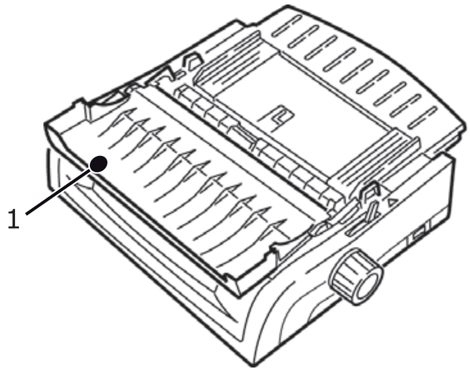


1. Lock Lever
2. Upper Tractor Cover
3. Pins

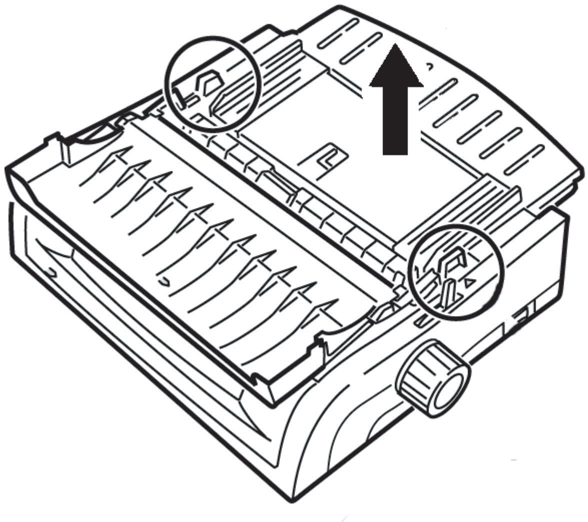
Make sure the paper lever is forward (position marked "REAR").



1. Open the access cover (1).



2. Grasp the tabs and lift off the sheet guide.

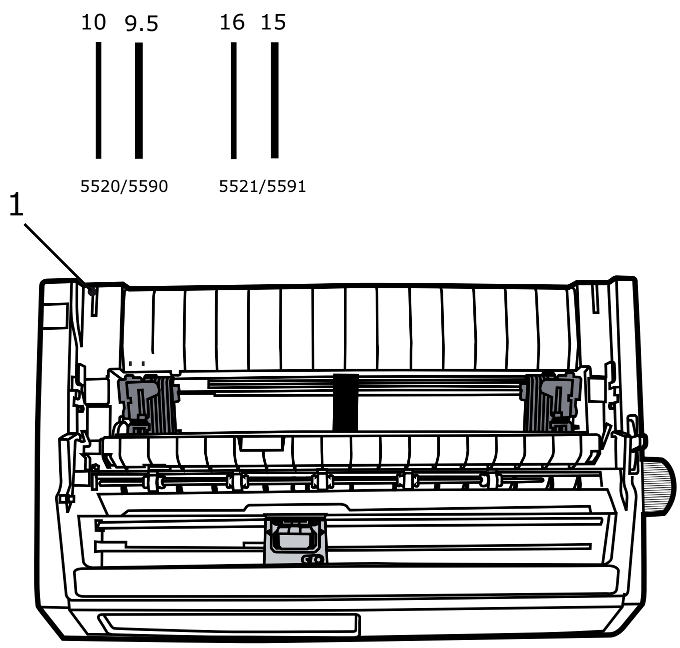


3. Pull up on the lock levers to release them.

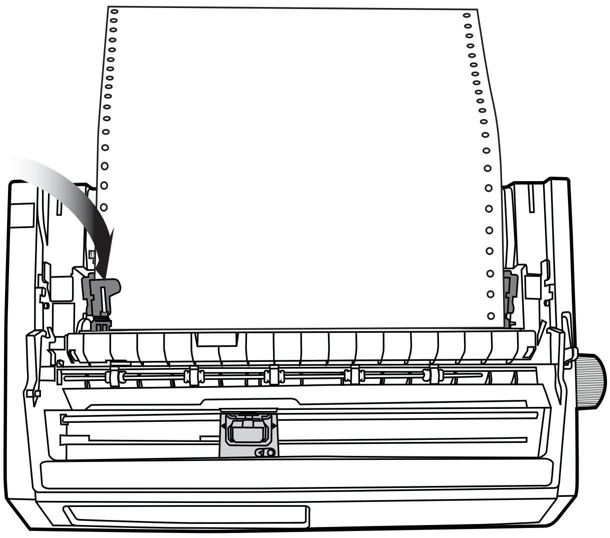
NOTE
The movement of the left tractor (as viewed from the front of the printer) is restricted to ensure that the paper covers the paper out sensor.

---

4. Move the left tractor to the position to match your paper size and push back on the lever to lock it in place, then move the right tractor to fit the width of the paper. You will find reference marks (1 in illustration below) on the printer for the two most common paper sizes:

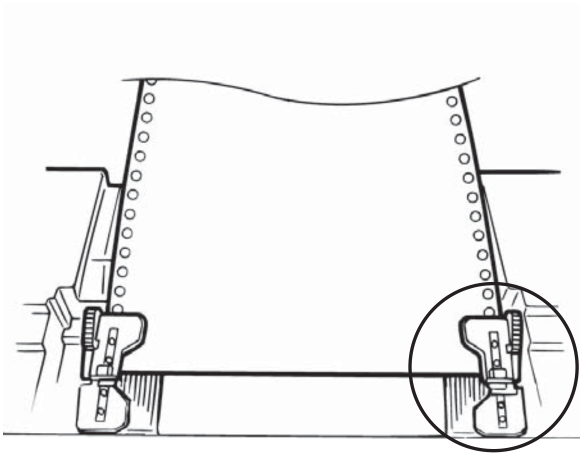


5. Open the tractor covers and place continuous forms paper on the first two pins of either tractor, then close the left tractor cover.



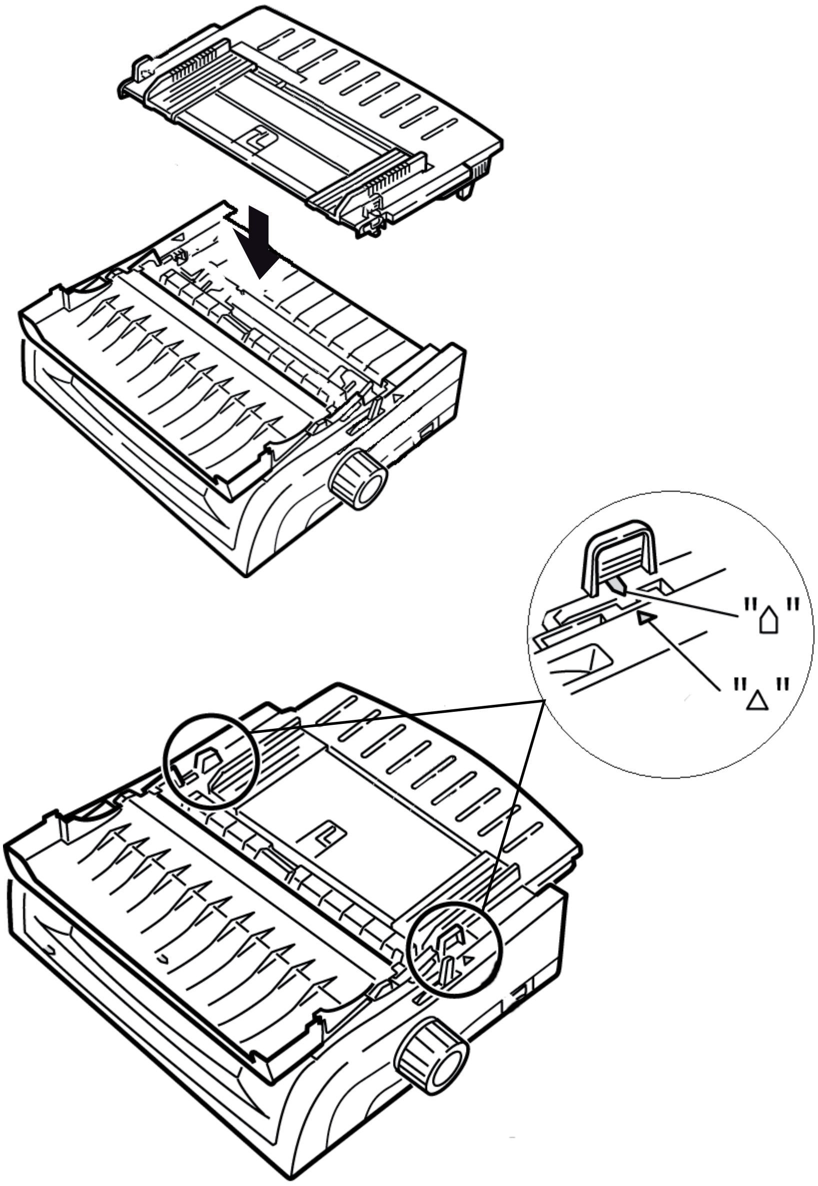
NOTE
You must keep the number of paper holes engaged on either pin the same. If you don't the paper will skew and jam.

6. Adjust the position of the right tractor to center the holes in the paper on the pins. Then, close the right tractor cover and push back the lock lever. Do not stretch the paper.

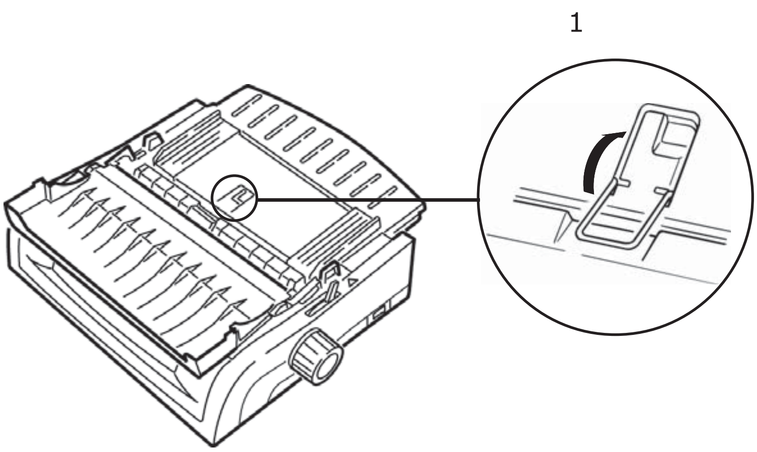


If the paper is too loose or too tight it can cause jams.

7. Reinstall the sheet feeder.



8. Place the wire guide (1) in the sheet guide on the pull-up roller assembly.



9. Press FF/LOAD.

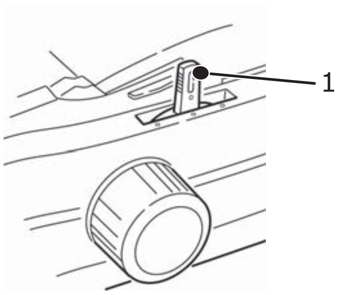
NOTE
The factory default setting for the Top of Form (where the printing should begin) is 1" down from the top of the page. To change the setting, see "Top of Form (TOF)" in the previous chapter.

TOP FEED (SINGLE SHEETS)

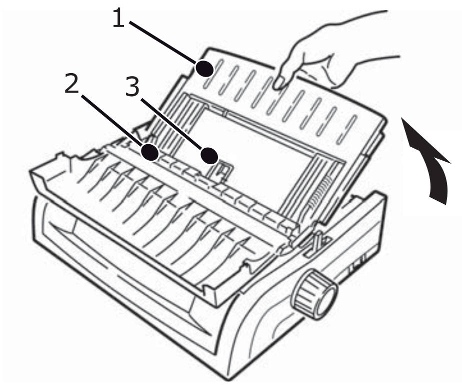
If you have continuous form paper in the path, press PARK to remove it before loading single sheets.

Make sure the printer is on and deselected (SEL light off).

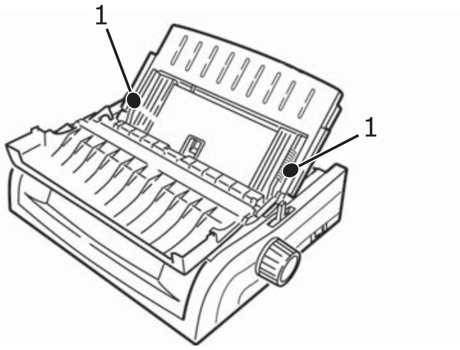
1. Move the paper lever (1) to the center position (marked "TOP").



2. Open the acoustic cover (1) and raise the sheet guide (2) to the single sheet position. Pivot the wire feed guide (3) up into the sheet guide.



3. Adjust the paper feed guides (1) for the width of the paper, then place a sheet of paper in the separator. The paper will feed into the printer.



NOTE

> *If the paper does not feed in, remove it. Check the paper lever position. Make sure the ALARM light is ON: if it is flashing, hold the SHIFT key and press the CHARACTER PITCH/RESET key. Reload the sheet of paper.*

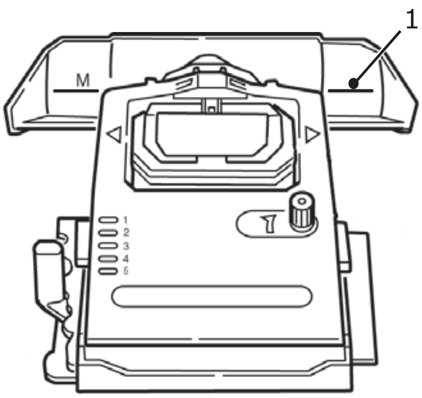
> *The factory default setting for the Top of Form (where the printing should begin) is 1" down from the top of the page. To change the setting, see “Top of Form (TOF)” in the previous chapter.*

Top of Form (TOF)

Top of Form (TOF) sets the print start position. The factory default is 1" from the top.

The TOF can be changed in increments of 1/144” (ML5520ECO/ML5521ECO) and 1/180" (ML5590ECO/ML5591ECO), for either a single print job, or all print jobs. The overall amount of adjustment is limited to avoid paper jams.

The first line prints at the red line of the plastic paper shield (1) on the printhead.



CAUTION!

If you turn the platen knob when the printer is not at Top of Form, the TOF will misalign. Always feed the paper to TOF before turning the platen knob!

NOTE

> *Your software may print the first line of print above or below where TOF is set. You may need to adjust the TOF to meet your software's requirements.*
> *The Top of Form and Forms Tear-Off settings of your printer interact. How you set the Top of Form depends on whether Forms Tear-Off is ON (set to 500 ms, 1 sec, or 2 sec) or OFF (the factory default setting).*

Forms tear-off

The Forms Tear-Off feature allows a printed continuous forms page to be torn off without wasting paper or adjusting the printer.

When printing stops, Forms Tear-Off automatically moves the paper to align the perforation with the tear bar (located under the access cover), after a time interval which you select through the menu.

Paper remains in the tear-off position until the printer receives more data. Then, the paper moves back down for printing.

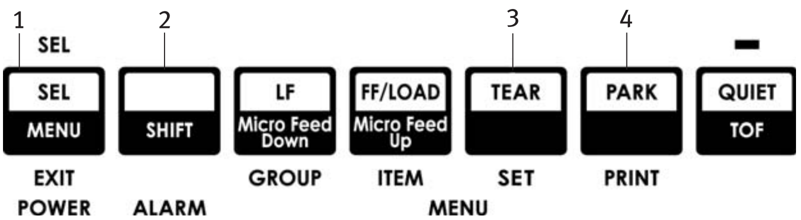
This feature has to be enabled.

There are two ways to determine the status of the Forms Tear-Off menu setting:

> Print the Menu.

> Use the TEAR key.

To print the Menu:



1. Make sure paper is loaded.
2. Hold SHIFT (2), then press SEL (1) to enter the Menu Mode.
3. Press PARK (4) to print the menu.
4. Look for the Form Tear-Off setting in the paper feed group you are using (Rear Feed, Bottom Feed or Top Feed—Forms Tear–Off appears in the Top Feed group only if the optional Roll Paper Stand is installed).

To use the TEAR key:

1. Make sure paper is loaded, and wait 2 seconds.
2. Press TEAR (3).
    > If the paper moves up, Forms Tear-Off is OFF.
    > If the paper moves down, Forms Tear-Off is ON.

SETTING TOP OF FORM (TOF)

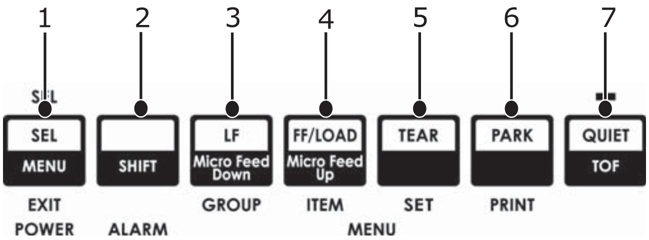
CAUTION!

If you turn the platen knob when the printer is not at Top of Form, the TOF will misalign. Always feed the paper to TOF before turning the platen knob.

The first line prints at the red line of the plastic paper shield on the printhead.

Forms Tear-off set to OFF - default

With paper loaded and the printer ON and selected:

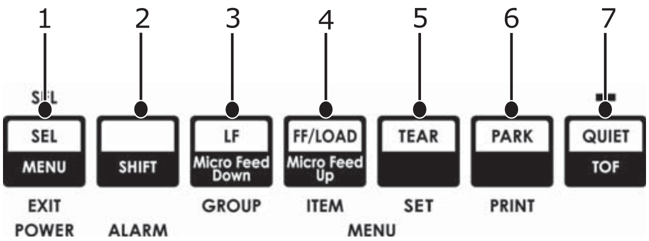


1. Press PARK (6) to park the paper.
   The SEL light goes off and the red alarm light comes on.
2. Press FF/LOAD (4) to load the paper.
3. If the printer is ON line, press SEL|MENU (1) to take the printer **OFF** line.
   The SEL light goes out.
4. Press and hold SHIFT (2), then:
   > Press LF|Micro Feed Down (3) to set the TOF higher (the paper moves down).
   > Press FF/LOAD|Micro Feed Up (4) to set the TOF lower (the paper moves up).
   (When you begin pressing the Micro Feed key, the printhead will move to the right).
5. Press SEL|MENU(1) to place the printer back on line.

To reset the Top of Form to the factory default, see "Resetting Top of Form to the Factory Default" later in this chapter.

Forms Tear-Off set to ON

With paper loaded and the printer ON and selected:



1. Press PARK(6) to park the paper.
   The SEL light goes off and the red alarm light comes on.
2. Press FF/LOAD (4) to load the paper.
3. Wait briefly until the paper moves up to the tear position, then press and hold TEAR (5).
   The paper moves to the current TOF and the SEL light is illuminated.

4. If the printer is ON line, press SEL|MENU (1) to take the printer Offline.
   The SEL light goes out.
5. Press and Hold SHIFT, then:
   > Press LF|Micro Feed Down (3) to set the TOF higher (the paper moves down).
   > Press FF/LOAD|Micro Feed Up (4) to set the TOF lower (the paper moves up).
   (When you begin pressing the Micro Feed key, the printhead will move to the right).
6. Press SEL|MENU (1) to save the setting and place the printer back on line.

To reset the Top of Form to the factory default, see "Resetting top of form to the factory default" on page 33.

Temporarily changing the top of form

CAUTION!

If you turn the platen knob when the printer is not at Top of Form, the TOF will misalign. Always feed the paper to TOF before turning the platen knob.

To move the Top of Form position lower for one page only:

1. Press SEL to deselect the printer.
2. Press LF to lower the position of the Top of Form.

Resetting top of form to the factory default

The factory default setting for the Top of Form (where the printing should begin) is 1" down from the top of the page.

To reset the Top of Form to the factory default:

1. Remove paper from the paper path.
2. Turn the printer off.
3. Press and hold PARK + QUIET|TOF while turning on the printer.
4. Reload paper.

Forms tear-off feature

This feature is normally turned off. To use Forms Tear-Off, you must enter the menu and change the setting to the desired time interval (see "Changing the forms tear-off setting" on page 34).

The Forms Tear-Off feature allows a printed continuous forms page to be torn off without wasting paper or adjusting the printer. It can be used for rear feed continuous forms, bottom feed continuous forms (with the optional push tractor installed), or for top feed roll paper (with optional roll paper stand installed).

When the printer is turned on, the paper feeds to the tear-off position.

When data is received, the paper automatically moves down to the print position (TOF) and printing begins.

NOTE
You can also move the paper down to the print position manually by pressing TEAR.

When printing stops, Forms Tear-Off automatically moves the paper to align the perforation with the tear bar (located under the access cover), after the time interval which you selected through the menu.

Paper remains in the tear-off position until the printer receives more data. Then, the paper moves back down for printing.

NOTE

- > *The status of the Forms Tear-Off menu setting affects how you set the Top of Form: see "Top of Form (TOF) and Forms Tear-Off" earlier in this chapter.*
- > *Do not use Forms Tear-Off with labels or multipart forms!*
- > *Forms Tear-Off cannot be used when the optional pull tractor is engaged.*

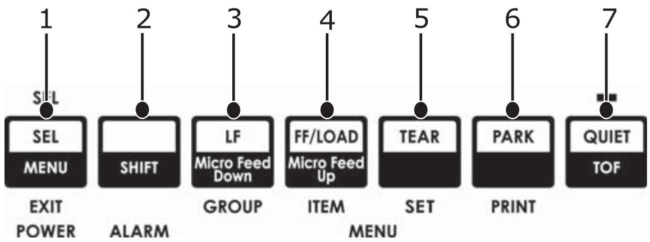
POTENTIAL ISSUES WITH SOFTWARE PACKAGES

If Forms Tear-Off is set to **ON** and the software package you are using "pauses" for a long enough interval while sending data to the printer, Forms Tear-Off may be activated. No data is lost, but this causes uneven print registration due to the paper movement.

If this occurs, use the menu to turn off this feature, then use the TEAR key to move the paper up to the tear position manually (see "Changing the forms tear-off setting").

CHANGING THE FORMS TEAR-OFF SETTING

The default setting for Forms Tear-Off is **OFF**.



To change the Forms Tear-Off setting:

1. Press SHIFT (2) + SEL (1).
2. Press GROUP (3) repeatedly until the Rear Feed or Bottom Feed group shows in the first column of the printed line, depending on which paper feed you are using,
3. Press ITEM (4) repeatedly until Form Tear-Off appears in the second column:

```
Rear Feed          Form Tear-Off          Off
```

4. Press SET (5) until the time interval you wish to select appears in the third column:

```
Rear Feed          Form Tear-Off          1 Sec
```

5. Press SHIFT (2) + SEL (1) to exit Menu Mode and save the setting.

Manual forms tear-off

If you don't wish to engage the Forms Tear-Off feature, you can advance:

> rear-feed continuous forms loaded on the built-in tractor

or

> bottom-feed continuous forms loaded on the optional push tractor

up to the tear-off position manually, by pressing **TEAR** (5).

Paper park

CAUTION!
Never park labels.

Paper park allows you to switch to single sheet printing without removing continuous feed paper from the printer.

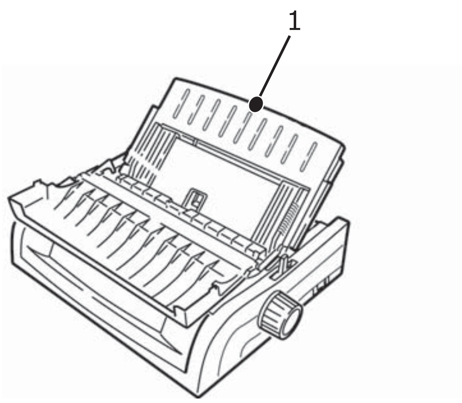
When you wish to print single sheets, simply press PARK (6) to retract the continuous form paper from the paper path, then lift the sheet guide, load the sheet and send the print job.

Changing paper paths

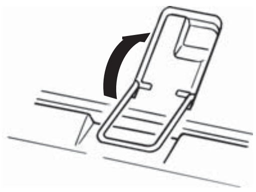
Continuous forms to single sheets

1. Tear off any printed pages, then press PARK.

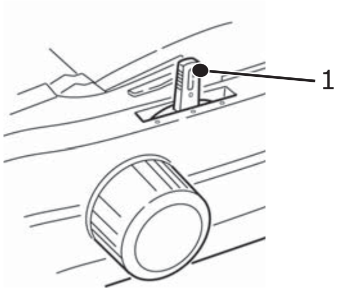
2. Raise the sheet guide (1) to the single sheet feed position.



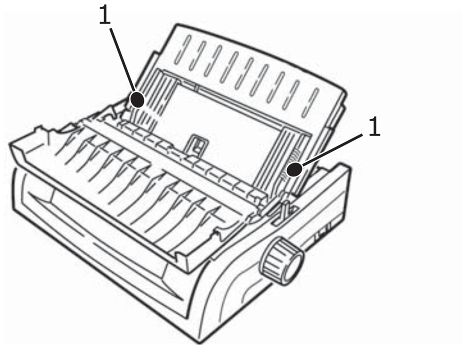
3. Pivot the wire feed guide into the sheet guide.



4. Move the paper lever (1) to the middle position marked “TOP.”

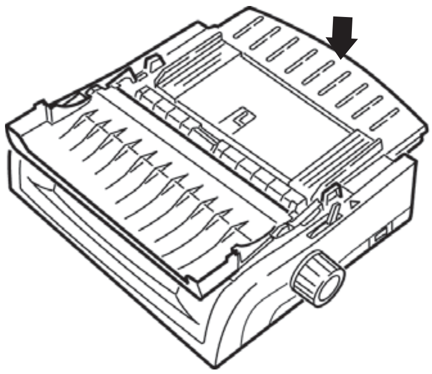


5. Adjust the paper guides (1) for the size of paper you are using, then place a sheet of paper in the sheet guide.

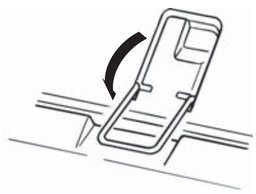


SINGLE SHEETS TO CONTINUOUS FORMS

1. Press FF/LOAD to remove the single sheet paper.
2. Lower the sheet guide into the continuous forms position.

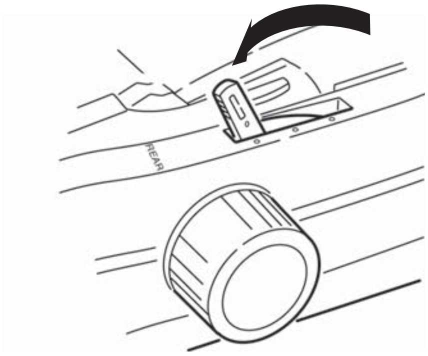


3. Swing the wire feed guide over onto the pull-up roller.

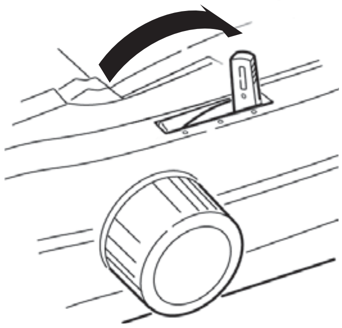


4. Move the paper lever to the appropriate position.

> Rear feed:



> Bottom feed:



> If necessary, load continuous form paper.

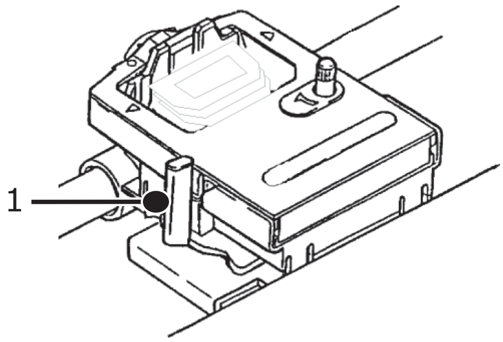
5. Press FF/LOAD.

Printhead Gap

1. The printhead gap is the distance between the printhead and the platen.

CAUTION!
Make sure the printer is turned OFF before you open the access cover.

To adjust the gap, open the access cover and move the coloured lever (1) to the recommended setting from the table.

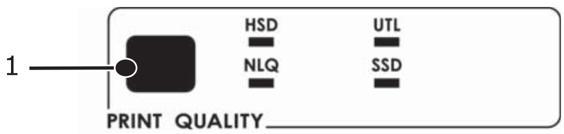


SETTING	MEDIA
1	Standard paper
2	2-part form (with carbon)
3	3-part form (with carbon)
4	4-part form (with carbon)
5	Envelopes or extra thick paper

NOTE
When the head gap is set to 2, 3, 4 or 5, the printer automatically slows down for better print quality with multipart forms.

Print Quality

ML5520ECO/ML5521ECO

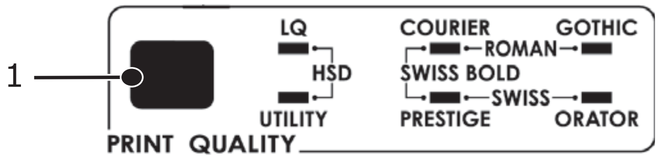


Press PRINT QUALITY (1) to select:

High Speed Draft	>	Lower quality, lower speed
	>	Gothic typeface only
Utility	>	Medium quality, medium speed
	>	Gothic typeface only

Near Letter Quality	>	Highest quality, lowest speed
	>	Courier or Gothic
Super Speed Draft	>	Lowest quality, highest speed
	>	Gothic typeface only

ML5590ECO/ML5591ECO



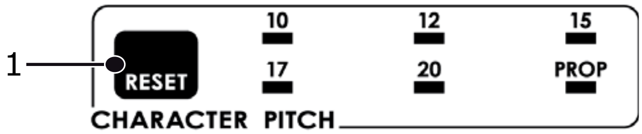
Press PRINT QUALITY (1) to select:

Letter Quality	>	Highest quality, slowest speed
	>	Choice of 7 typefaces
High Speed Draft	>	Lower quality, higher speed
	>	Gothic typeface only
Utility	>	Medium quality, medium speed
	>	Gothic typeface only

NOTE
Front panel settings for print quality and character pitch are normally overridden by software commands.

To select the typeface you want, press PRINT QUALITY (1) until the appropriate front panel lights are on.

CHARACTER PITCH



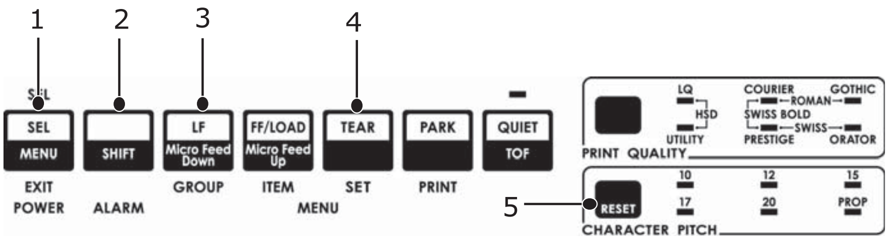
Character pitch determines how many characters will print on each line. You can choose a specific fixed width (10 to 20) for each character in characters per inch (CPI). The higher cpi settings are often used for spreadsheets.

Proportional (PROP) sets character widths based on the character itself: e.g., the letter i is assigned a narrower width than the letter m. This provides a more polished, typeset appearance.

To select Proportional, press the CHARACTER PITCH key until both the cpi value and PROP lights are illuminated.

To select non-proportional, press the CHARACTER PITCH key until the light for the cpi value you wish to use is illuminated.

PRINTER RESET



Clearing some error conditions requires that you reset (reinitialise) the printer. To do this:

1. Press and release SEL (1) to take the printer off line.
   The SEL light goes out.
2. Press and hold SHIFT (2), then press the RESET/CHARACTER PITCH key (5).

NOTE
Pressing SHIFT and RESET reinitialises the printer, but does not affect any menu settings and does not reset the printer to the factory defaults. For information on resetting the printer to the factory defaults, see *"Resetting the menu to the factory defaults" on page 41.*

CHANGING EMULATIONS

Make sure paper is loaded.

1. Press and hold SHIFT (2), then press SEL (1).
2. Press LF(3).
   The following line will print:

```
Printer Control   Emulation Mode      IBM PPR  (ML5520ECO/ML5521ECO)
                                      EPSON LQ (ML5590ECO/ML5591ECO)
```

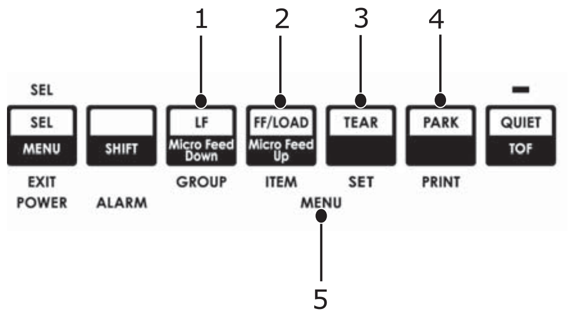
3. Press TEAR (4) repeatedly until the emulation you wish to select prints in the right-hand column.
4. Press and hold SHIFT (2), then press SEL (1) to save your setting and exit the Menu Mode.

MENU MODE

In Menu Mode, use the front panel keys to change the defaults for the printer parameters. The changes made in the Menu Mode are automatically saved when you exit the Menu Mode and are retained, even when the printer is turned off.

NOTE
Please print the current Menu Mode settings before you reset or change them. This is the only way to have a record of the settings.

MENU MODE KEYS



NO.	KEY/LIGHT	FUNCTION
1.	GROUP	Prints the next Group in the Menu. With the SHIFT key, prints the previous Group.
2.	ITEM	Prints the next Item in the Group. With the SHIFT key, prints the previous Item in the Group.
3.	SET	Prints the next setting for an Item. With the SHIFT key, prints the previous setting for an Item.
4.	PRINT	Prints a copy of all the Menu settings. With the SHIFT key, prints the current settings for the Group selected.
5.	Menu Light	Illuminated when the printer is in Menu mode.

ENTERING AND EXITING MENU MODE

Hold down the SHIFT key while pressing SEL.

RESETTING THE MENU TO THE FACTORY DEFAULTS

1. Turn the printer OFF.

2. Press SEL and LF while turning the printer ON.

PRINTING THE MENU SETTINGS

1. Make sure paper is loaded in the printer.

2. Press and hold SHIFT, then press SEL to enter the Menu Mode.

3. Press PRINT (PARK key).

PRINTING ALL MENU SETTINGS

To print out a listing of the settings for all menu items, regardless of the emulation selected or the accessories installed:

Make sure paper is loaded in the printer.

1. Press and hold SHIFT, then press SEL to enter the Menu Mode.
2. Press and hold SHIFT, then press PRINT QUALITY.

CHANGING THE MENU SETTINGS

1. Press and hold SHIFT, then press SEL to enter the Menu Mode.
2. Use the GROUP, ITEM and SET keys to make your changes:
3. Press GROUP until the Group you wish to change appears in the first column.
4. Press ITEM until the Item you wish to change appears in the second column.
5. Press SET until the setting you want appears in the third column.
6. Press and hold SHIFT, then press SEL to exit the Menu Mode and save your settings.

NOTE
If you turn off the printer without first exiting the Menu Mode, the changes you have made will be lost.

Controlling access to the printer

> You can control access to the printer by changing the setting for the Operator Panel Function in the Menu from Full Operation (the factory default) to Limited Operation.

> When Limited Operation is selected, the PRINT QUALITY and CHARACTER PITCH keys don’t work. This prevents these settings from being changed from the control panel when several people are using the printer.

MENU SETTINGS

The table following shows the items which may appear in the menu. Settings which are engaged at the factory (defaults) are set in bold. Some groups or entries will only appear when a specific emulation is engaged, as noted.

GROUP	ITEM	FUNCTION	SETS	
			ML5520ECO/ ML5521ECO	**ML5590ECO/ ML5591ECO**
Printer Control	Emulation Mode	Selects the printer command set (emulation) you want to engage.	**IBM PPR** EPSON FX ML	**EPSON LQ** IBM PPR IBM AGM
Font	Print Mode	Choose the quality and typeface of printing.	NLQ Courier NLQ Gothic NLQ OCR-B **Utility** HSD	**LQ Courier** LQ Roman LQ Swiss LQ Swiss Bold LQ Orator LQ Gothic LQ Prestige LQ OCR- A LQ OCR- B Utility HSD
	Draft mode	Applies only when the Print Mode is set to DRAFT. Selects the draft mode to be used: HSD (High Speed Draft) or SSD (Super Speed Draft).	**HSD** SSD	**-**
	Pitch	Choose the character width in characters per inch (cpi).	**10 CPI** 12 CPI 15 CPI 17.1 CPI 20 CPI	
	Proportional Spacing	Select whether to use proportional spacing or not.	Yes **No**	
	Style	Change to italics if you want the printed characters to be slanted.	**Normal** Italics	
	Size	Select the character scale size. Selects both double width and double height character or single width and single height characters.	**Single** Double	

GROUP	ITEM	FUNCTION	SETS	
			ML5520ECO/ ML5521ECO	ML5590ECO/ ML5591ECO
Symbol Sets	Character Set	Select character code table.	Set I **Set II (Epson and IBM mode)** Standard (ML mode only) Line Graphics (ML mode only) Block Graphics (ML mode only)	Set I **Set II**
	Language Set	Select a language character set. Replaces certain standard symbols with special characters used in foreign languages.	**ASCII** French German British Danish I Swedish I Italian Spanish I Japanese Norwegian Danish II Spanish II Latin American French Canadian Dutch TRS80 Swedish II Swedish III Swedish IV Turkish Swiss I Swiss II Publisher	**ASCII** French German British Danish I Swedish I Italian Spanish I Japanese Norwegian Danish II Spanish II Latin American French Canadian Dutch Swedish II Swedish III Swedish IV Turkish Swiss I Swiss II Publisher
	Zero Character	Select either print font pattern to receive a zero character located at 30H in ANK code.	Slashed **Unslashed**	

GROUP	ITEM	FUNCTION	SETS	
			ML5520ECO/ ML5521ECO	**ML5590ECO/ ML5591ECO**
Symbol Sets cont.	Code Page	Select a code page.	**USA** Canada French Multilingual Portugal Norway Turkey Greek_437 Greek_869 Greek_928 Greek_437 CYPRUS Polska Mazovia Serbo Croatic I Serbo Croatic II ECMA-94 Hungarian CWI Windows Greek Windows East Europe Windows Cyrillic East Europe Latin II - 852 Cyrillic I - 855 Cyrillic II - 866 Kamenicky(MJK) ISO Latin 2 Hebrew NC (862) Hebrew OC Turkey_857 Latin 5 (Windows Turkey) Windows Hebrew Ukrainian Bulgarian ISO Latin 6 (8859/ 10) Windows Baltic Baltic_774 KBL-Lithuanian Cyrillic Latvia Roman-8 Icelandic-861 Multilingual 858 ISO 8859-15 Greek_737 POL1 Macedonian	**USA** Canada French Multilingual Portugal Norway Turkey Greek_437 Greek_869 Greek_928 Greek_437 CYPRUS Polska Mazovia Serbo Croatic I Serbo Croatic II ECMA-94 Hungarian CWI Windows Greek Windows East Europe Windows Cyrillic East Europe Latin II - 852 Cyrillic I-855 Cyrillic II-866 Kamenicky (MJK) ISO Latin 2 Hebrew NC (862) Hebrew OC Turkey_857 Latin 5 (Windows Turkey) Windows Hebrew Ukrainian Bulgarian ISO Latin 6 (8859/ 10) Windows Baltic Baltic_774 KBL-Lithuanian Cyrillic Latvia Roman-8 Icelandic-861 Multilingual 858 ISO 8859-15 Greek_737 Asmo 449+ Asmo 708 Arabic 864 Windows Arabic POL1 Macedonian
	Slashed Letter 0	Set whether to convert slashed 0 located at 9BH and 9DH in USA code page or not.	Yes **No**	

GROUP	ITEM	FUNCTION	SETS	
			ML5520ECO/ ML5521ECO	ML5590ECO/ ML5591ECO
Rear Feed	Line Spacing	Select line feed pitch. Change to 8 lines per inch (lpi) to get more lines per page.	**6 LPI** 8 LPI	
	Form Tear-Off	When printer is idle (0.5, 1.0 or 2.0 sec), paper is advanced from the current print position to the tear position. When data is received, paper is moved to its original printing position.	**Off** 0.5 sec 1.0 sec 2.0 sec	
	Skip Over Perforation	Select whether to skip over perforation or not. (When a skip over perforation command is received, the received command is given priority.)	**No** Yes	
	Page Width (Displayed only for ML5521ECO and ML5591ECO)	Change to 8″ to print on narrow paper.	**345.44 mm (13.6″)** 203.2 mm (8″)	
	Page Length	Select the length of a continuous form. This enables the printer to keep track of the initial printing position (TOF) on each page.	279.4 mm (11″) 296.3 mm (11 2/3″) **304.8 mm (12″)** 355.6 mm (14″) 431.8 mm (17″) 76.2 mm (3″) 82.6 mm (3.25″) 88.9 mm (3.5″) 101.6 mm (4″) 127.0 mm (5″) 139.7 mm (5.5″) 152.4 mm (6″) 177.8 mm (7″) 203.2 mm (8″) 215.9 mm (8.5″)	

GROUP	ITEM	FUNCTION	SETS	
			ML5520ECO/ ML5521ECO	**ML5590ECO/ ML5591ECO**
Bottom Feed	Line Spacing	Select line feed pitch.	**6 LPI** 8 LPI	
	Form Tear-Off	When printer is idle (0.5, 1.0 or 2.0 sec), paper is advanced from the current print position to the tear position. When data is received, paper is moved to its original printing position.	**Off** 0.5 sec 1.0 sec 2.0 sec	
	Skip Over Perforation	Select whether to skip over perforation or not. (When a skip over perforation command is received, the received command is given priority.)	**No** Yes	
	Page width (Displayed only for ML5521ECO/ ML5591ECO)	Change to 8” to print on narrow paper.	**345.44 mm (13.6”)** 203.2 mm (8”)	
	Page Length	Select the length of a continuous form.	279.4 mm (11”) 296.3 mm (11 2/3”) **304.8 mm (12”)** 355.6 mm (14”) 431.8 mm (17”) 76.2 mm (3”) 82.6 mm (3.25”) 88.9 mm (3.5”) 101.6 mm (4”) 127.0 mm (5”) 139.7 mm (5.5”) 152.4 mm (6”) 177.8 mm (7”) 203.2 mm (8”) 215.9 mm (8.5”)	

GROUP	ITEM	FUNCTION	SETS	
			ML5520ECO/ ML5521ECO	**ML5590ECO/ ML5591ECO**
Top Feed	Line Spacing	Select line feed pitch.	**6 LPI** 8 LPI	
	Form Tear-Off (Displayed when IBM emulation is selected.)	When printer is idle (0.5, 1.0 or 2.0 sec), paper is advanced from the current print position to the tear position. When data is received, paper is moved to its original printing position.	**Off** 0.5 sec 1.0 sec 2.0 sec	
	Bottom Margin	Change to Invalid if you want the printer to ignore the bottom margin setting.	**Valid** Invalid	
	Page width (Displayed only for ML5521ECO/ ML5591ECO)	Change to 8” to print on narrow paper.	**345.44 mm (13.6”)** 203.2 mm (8”)	
	Page Length	Select the page length of cut sheet.	279.4 mm (11”) 296.3 mm (11 2/3”) **304.8 mm (12”)** 355.6 mm (14”) 420.9 mm (16.57”) 76.2 mm (3”) 82.6 mm (3.25”) 88.9 mm (3.5”) 101.6 mm (4”) 127.0 mm (5”) 139.7 mm (5.5”) 152.4 mm (6”) 177.8 mm (7”) 203.2 mm (8”) 215.9 mm (8.5”)	
	Wait Time	Select the waiting time between setting paper on the tray and feeding it while the printer is waiting for paper to be fed in cut sheet manual feed mode.	0.5 sec **1.0 sec** 2.0 sec	
	Paper Length Control	Control the page length of cut sheet.	by MENU setting **by Actual Page Length**	**by MENU setting** by Actual Page Length

GROUP	ITEM	FUNCTION	SETS	
			ML5520ECO/ ML5521ECO	**ML5590ECO/ ML5591ECO**
Set-up	Graphics	Select the printing direction when double-height print data exists in a line.	Uni-directional **Bi-directional**	
	7 or 8 Bits Graphics (Displayed only for ML Emulation)	Select to change graphics settings.	**7** 8	-
	Receive Buffer Size	Select size of the received buffer. When "1 Line" is selected, the receive buffer size is set to 2 k bytes.	1 Line 32 K **64 K** 128 K	
	Paper Out Override	Senses when less than 1" (25mm) of paper remains and stops printing. Change to YES to override the sensor and print closer to the bottom of the page.	Yes **No**	
	Print Registration	Change the setting as required to obtain the best registration for bi-directional printing.	0.25mm Right, 0.20mm Right, 0.15mm Right, 0.10mm, Right, 0.05mm, Right, **0**. 0.05mm Left, 0.10mm Left, 0.15mm Left, 0.20mm Left, 0.25mm Left	
	7 or 8 Bits Data Word	Select data word lengths.	7 **8**	-
	Operator Panel Function	Select full or limited operation. Change to Limited Operation to deactivate the PRINT QUALITY and CHARACTER PITCH buttons, so that these features can only be controlled through your software. This prevents these being changed from the control panel when several people are using the printer.	**Full Operation** Limited Operation	
	Reset Inhibit	Changing this to Yes prevents a reset signal from the computer from resetting the printer to its defaults.	**No** Yes	
	Print Suppress Effective	If your system uses the DC1 and DC3 codes for something other than the print suppress mode, change the setting to NO.	No **Yes**	

GROUP	ITEM	FUNCTION	SETS	
			ML5520ECO/ ML5521ECO	**ML5590ECO/ ML5591ECO**
Set-up cont.	Auto LF	Select whether to perform auto LF operation or not upon receiving a CR code. If your print out is consistently double spaced, select No, if it overprints, select Yes.	**No** Yes	
	Auto CR (Displayed only for IBM emulation)	Select Yes to add a carriage return when a Line Feed is received at the end of a line.	**No** Yes	
	CSF Bin Select	Appears only when the optional Dual-Bin cut Sheet Feeder is installed. Use this to switch to Bin 2 as the default.	**Bin 1** Bin 2	
	Print DEL Code (Displayed only for ML Emulation)	Change the setting to Yes to print the DEL code (decimal 27) as a solid box.	**No** Yes	-
	SI Select Pitch (10 CPI) (Displayed only for IBM emulation)	Select how to handle an SI command received in 10 CPI mode.	**17.1 CPI** 15 CPI	
	SI Select Pitch (12 CPI) (Displayed only for IBM emulation)	Select how to handle an SI command received in 12 CPI mode.	**12 CPI** 20 CPI	
	Time Out Print	Select valid or invalid.If your software spends a long time processing between portions of data it feeds to the printer, change the setting to Invalid to keep your printer from dumping the received data while it is waiting for more.	Invalid **Valid**	
	Auto Select	Determines whether or not the printer will automatically be selected after you load in paper. Select No if you want to set the Top of Form position. If you always want to use the same Top of Form position, change the setting to YES.	Yes **No**	
	Graphics Speed	Change to High for faster printing when the optimum print quality is not an issue.	High **Low**	

GROUP	ITEM	FUNCTION	SETS	
			ML5520ECO/ ML5521ECO	**ML5590ECO/ ML5591ECO**
Set-up cont.	Centering Position	Used to limit printhead travel when printing narrow columns. Select Mode 1 for the narrow carriage printer. Select Mode 1 or Mode 2 for the wide carriage printer.	**DEFAULT** Mode 1 Mode 2	
	CSF Type	To avoid paper jams, change the setting to Narrow if you are using the optional Cut-Sheet Feeder on the wide model (ML5521ECO and ML5591ECO)	**Wide** Narrow	
	ESC SI Pitch (Displayed only for IBM emulation)	Sets the character pitch used when the ESC SI command is received.	**17.1 CPI** 20 CPI	
	Select Language Set (Displayed only when Epson emulation is selected.)	Enable/disable the combination of the code page setting and the language conversion. Combined: Enable the combination of the code page and the language conversion. Code Page Only: Enable the code page only and suppress the language conversion. Changing the language set replaces certain standard symbols with special characters used in foreign languages.	**Combined** Code Page Only	
	Power Save Time	Sets the interval the printer waits for more data before it goes onto the power save mode.	**5 min** 10 min 15 min 30 min 60 min	
	Time Out FF	The printer will feed or eject paper if no data is received during a set period of time.	**Invalid** 200ms 500ms 1 sec	

GROUP	ITEM	FUNCTION	SETS	
			ML5520ECO/ ML5521ECO	ML5590ECO/ ML5591ECO
Parallel I/F	I-prime	Select whether to print or clear buffer contents upon initialisation by receiving I-PRIME.	Invalid **Buffer Print** Buffer Clear	
	Auto Feed XT (Displayed only for EPSON emulation)	If your system uses pin 14 of the parallel interface to control automatic line feed, change the setting to Valid.	Valid **Invalid**	
	Bi-direction	Set whether to return a device ID or not in accordance with IEEE1284.	**Enable** Disable	
Serial I/F (Displ-ayed when connec-ted to Serial Interface)	Parity	None: Absence of parity bit Odd: Odd parity Even: Even parity Ignore: Do not convert the character to ox40 in case of parity error.	**None** Odd Even Ignore	
	Serial Data 7/8 Bits	Select Serial bit.	**8 bit** 7 bit	
	Protocol	Select an I/F Busy control method.	**Ready/Busy** X-On/X-OFF Ready/Busy & X-ON/X-OFF	
	Diagnostic Test	Select to perform input/ output diagnosis of RS-232C interface signals.	**No** Yes	
	Busy Line	Select to set the Busy Line.	**SSD-** SSD+ DTR RTS	
	Baud Rate	Select to set the Baud Rate.	**9,600 bps** 4,800 bps 2,400 bps 1,200 bps 600 bps 300 bps 19,200 bps	
	DSR Signal	Select the DSR Signal.	**Valid** Invalid	
	DTR Signal	Select a method to switch a DTR signal of a serial interface.	**Ready on Power Up** Ready on Select	
	Busy Time	Select the minimum time between BUSY to READY.	**0.2 sec** 1.0 sec	

<table>
<tr><th rowspan="2">GROUP</th><th rowspan="2">ITEM</th><th rowspan="2">FUNCTION</th><th colspan="2">SETS</th></tr>
<tr><th>ML5520ECO/
ML5521ECO</th><th>ML5590ECO/
ML5591ECO</th></tr>
<tr><td rowspan="4">CSF Bin 1
(Display-ed when Single-bin Cut-sheet feeder is installed)</td><td>Line Spacing</td><td>Select line feed pitch</td><td colspan="2">6 LPI
8 LPI</td></tr>
<tr><td>Bottom Margin</td><td>Change to Invalid if you want the printer to ignore the bottom margin setting.</td><td colspan="2">Valid
Invalid</td></tr>
<tr><td>Page Width (Displayed only for ML5521ECO/ ML5591ECO)</td><td>Change to 8 inch to print on letter size paper.</td><td colspan="2">203.2 mm (8”)
345.44 mm (13.6”)</td></tr>
<tr><td>Page Length</td><td>Select the length of cut sheet.</td><td colspan="2">279.4 mm (11”)
296.3 mm (11 2/3”)
304.8 mm (12”)
355.6 mm (14”)
420.9 mm (16.57”)
88.9 mm (3.5”)
101.6 mm (4”)
127.0 mm (5”)
139.7 mm (5.5”)
152.4 mm (6”)
177.8 mm (7”)
203.2 mm (8”)
215.9 mm (8.5”)</td></tr>
<tr><td rowspan="3">CSF Bin 2(Display-ed when Double-bin Cut-sheet feeder is installed)</td><td>Line Spacing</td><td>Select line feed pitch.</td><td>6LPI
8LPI</td><td></td></tr>
<tr><td>Bottom Margin</td><td>Change to Invalid if you want the printer to ignore the bottom margin setting.</td><td>Valid
Invalid</td><td></td></tr>
<tr><td>Page Length</td><td>Select the length of cut sheet.</td><td colspan="2">279.4 mm (11”)
296.3 mm (11 2/3”)
304.8 mm (12”)
355.6 mm (14”)
420.9 mm (16.57”)
88.9 mm (3.5”)
101.6 mm (4”)
127.0 mm (5”)
139.7 mm (5.5”)
152.4 mm (6”)
177.8 mm (7”)
203.2 mm (8”)
215.9 mm (8.5”)</td></tr>
</table>

Maintenance

Replacing the ribbon cartridge

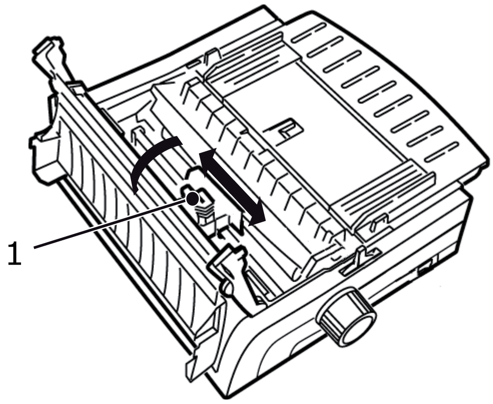
Make sure you have the correct replacement ribbon for your printer. The wrong ribbon will not print when installed in your printer. Look for the printer model number on the ribbon package.

Ribbon cartridge handling

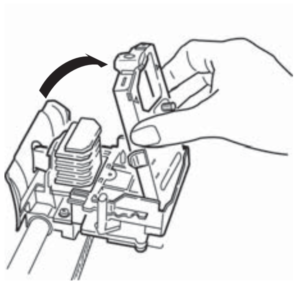
- Leave unused ribbon cartridges in their packages until needed.
- Careful; the ribbon ink may cause permanent stains.
- Ribbon ink on skin or clothing can usually be removed with soap and water.

Make sure the printer is turned OFF.

1. Open the access cover and center the printhead (1).



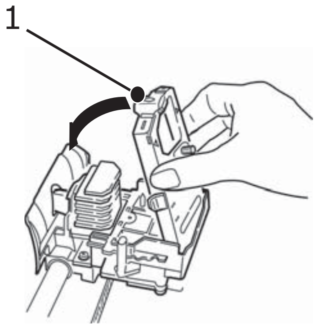
2. Swing the used ribbon cartridge up off the printhead, lift it out, and discard it.



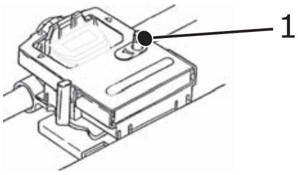
WARNING!
The printhead may be HOT.

3. Unpack the new ribbon cartridge and install it.

   Do not remove the ribbon shield (1) from the ribbon!



4. Turn the take-up knob (1) in the direction of the arrow to take up any ribbon slack.



5. Close the access cover and turn the printer back on.

CAUTION!

- **If ribbon should contact the eyes: Flush eyes with large quantities of water for 15 minutes, keeping eyelids open with fingers. Seek medical attention.**
- **If ribbon should contact the skin: Wash thoroughly with soap and water.**

Cleaning your printer

To keep your printer in good operating condition, you are advised to clean it regularly.

WARNING!

Set the printer Power Switch to OFF and disconnect the power cable from the printer before cleaning the printer.

Printer exterior

CAUTION!

Keep the access cover closed to avoid the possibility of detergent entering the printer.

Clean the exterior of the printer as required, but at least every six months or 300 hours of operation, whichever comes first.

> Moisten a piece of cotton cloth with diluted natural detergent and carefully wipe the printer exterior.

Cleaning the housing

WARNING!

- **As the print head becomes hot during printing, allow it to cool before carrying out any cleaning inside the printer.**
- **Do not use any flammable solvents for cleaning the printer to avoid any risk of fire or electric shock.**

You should clean the printer housing every six months (or after about 300 hours of operation.

CAUTION!

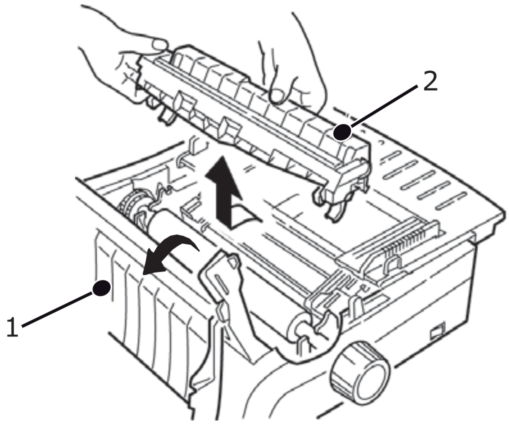
Never use strong solvents or strong detergents on the cabinet—they could damage the housing.

1. Turn off the printer.
2. Use the platen knob to back the paper out of the printer.

CAUTION!

Make sure the printer is turned off before you open the access cover.

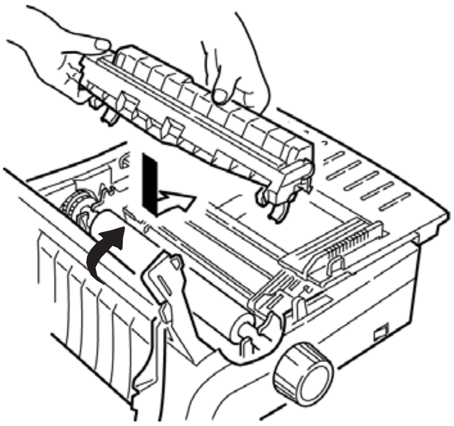
3. Open the access cover (1) and remove the pull-up roller assembly (2).



4. Use a clean, dry cloth to dust around the carriage shaft and platen. Remove any loose bits of paper.

CAUTION!
> **When you clean the interior of the printer with a vacuum cleaner, do not attempt to clean any parts smaller than the suction nozzle.**
> **Do not clean any interior working parts with suction nozzle to avoid possible damage to the printer.**

5. Reinstall the pull-up roller assembly and close the access cover.



Troubleshooting

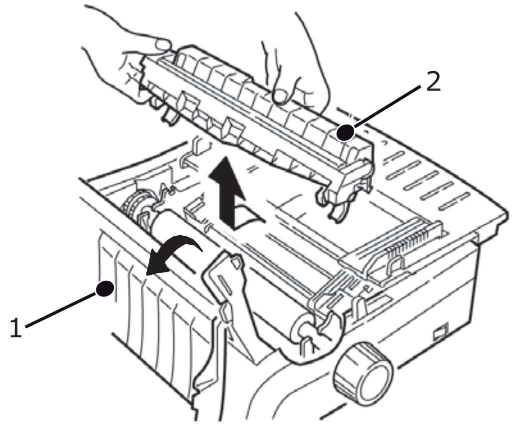
Clearing paper jams

Rear feed jams

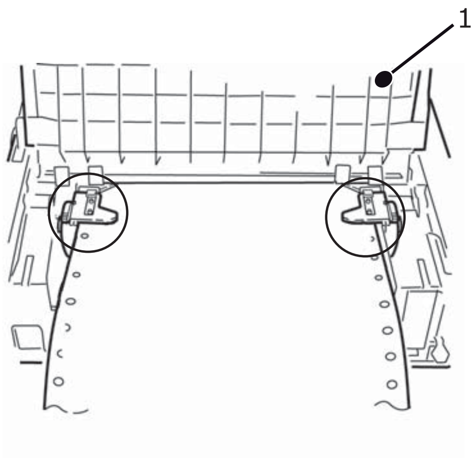
1. Turn off the printer.
2. Use the platen knob to back the paper all the way out of the printer.

> **CAUTION!**
>
> **Make sure the printer is turned OFF before you open the access cover.**

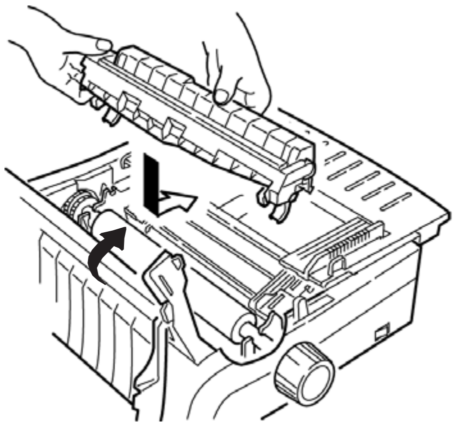
3. Open the access cover (1) and remove the pull-up roller assembly (2). Remove any torn paper.



4. Lift the sheet guide (1) and reload paper. Make sure you lock the tractor covers.



5. Lower the sheet guide, then install the pull-up roller assembly and close the access cover.



6. Turn ON the printer and press FF/LOAD.

Rear feed, repeating paper jams

If the paper keeps jamming, you may have:

> defective paper

> misaligned paper

> bits of paper stuck in the paper path

Defective paper

Replace the defective paper with a fresh stack.

Misaligned paper

1. Turn off the printer.
2. Use the platen knob to back the paper all the way out of the printer.
3. Tear off a couple of sheets of paper, leaving a new, clean, square-cut edge.
4. Reload the paper and turn the printer back on.

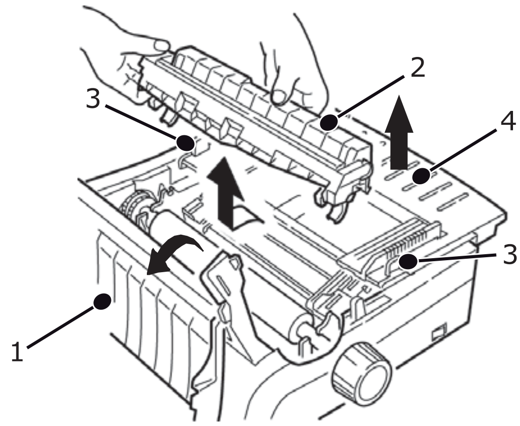
Fragments of paper in the paper path

1. Turn off the printer.
2. Use the platen knob to back the paper all the way out of the printer.

CAUTION!

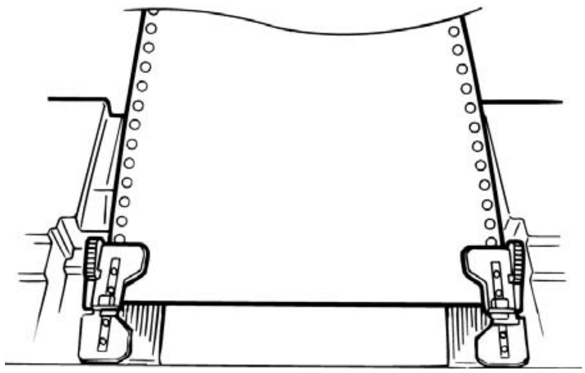
Make sure the printer is turned OFF before you open the access cover.

3. Open the access cover (1) and remove the pull-up roller assembly (2). Then grasp the tabs (3) on the sheet guide (4) and lift it off the printer.



4. Remove any torn pieces of paper.

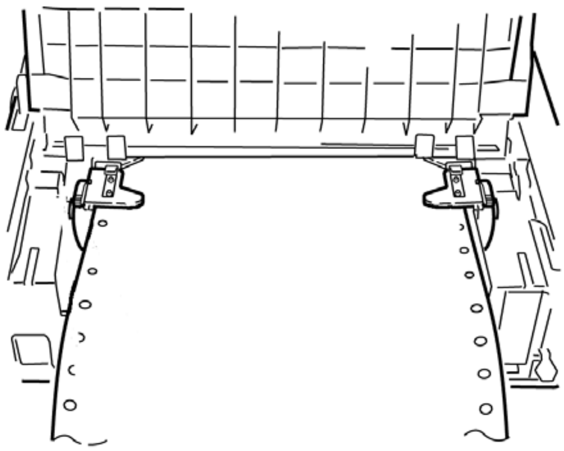
5. Fold some continuous form paper over three times to make a page four sheets thick. Then, load it on the tractors and close and lock the covers.



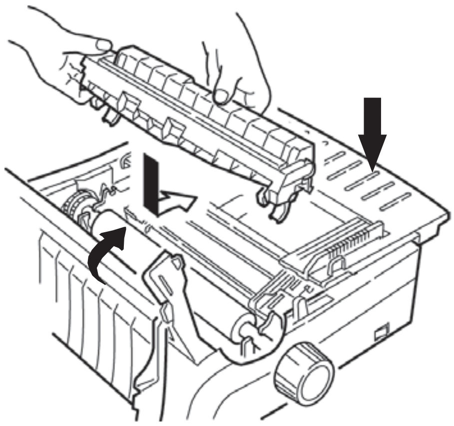
6. Use the platen knob to draw the quadruple-thick page around the platen. This brings out jammed pieces of paper.

7. Remove the paper pieces. Then, use the platen knob to back the paper out.

8. Load standard paper, close and lock the tractor covers.



9. Install the sheet guide, then install the pull-up roller assembly and close the access cover.

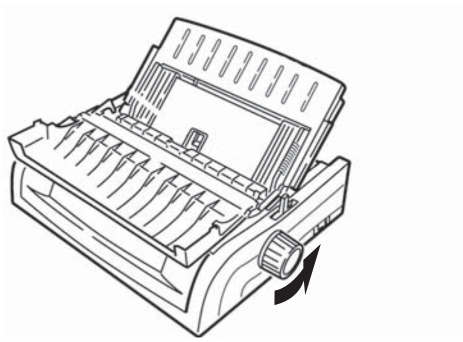


10. Turn the printer on and press FF/LOAD.

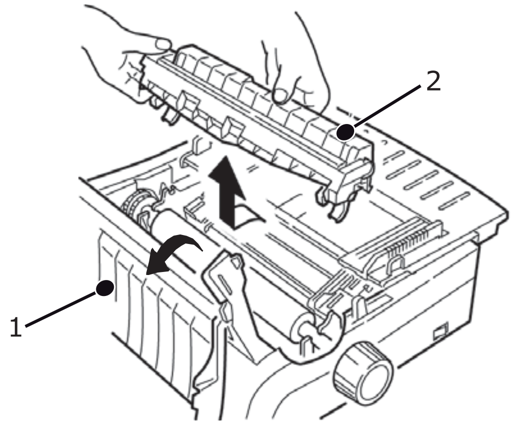
SINGLE SHEET PAPER JAMS

1. Turn off the printer.

2. Use the platen knob to back the paper out.



3. Open the access cover (1) and remove the pull-up roller assembly (2).



4. Remove any torn pieces from around the carriage.

5. Reinstall the pull-up roller assembly and close the access cover.

GENERAL PROBLEMS

Here are some general things to check before proceeding with detailed troubleshooting.

> Is the printer plugged in and turned ON?

> Are the connections (power and interface) secure?

> Is the product being operated under the proper ambient conditions?

> Does the paper being used meet the specifications for this product?

> Is the paper properly installed?

> Is the ribbon properly installed?

> Is an Oki ribbon being used?

> Is the printhead gap correctly set?

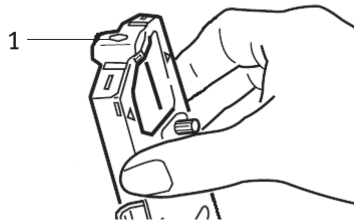
> Are the correct printer drivers being used for the printer?

NOTE

> *Settings in your software application will normally override any settings in your printer driver.*

> *Printer driver settings normally override settings from the printer menu or printer front panel.*

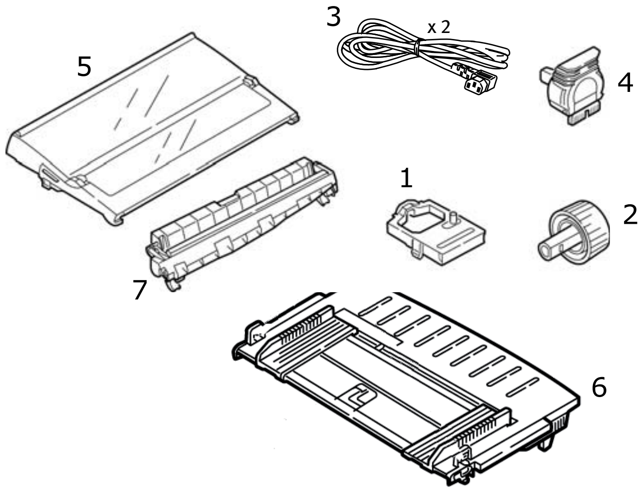
PROBLEM	SOLUTION
My word processor files do not print the way I have the menu and front panel set.	Remember: > Settings in your software application can override settings in your printer driver. > Your printer driver settings can override any settings from the printer menu or printer front panel. Before sending a file to the printer, many word processors send either an "initialisation string" or an I-Prime signal to the printer. The initialisation string contains codes that override the panel and menu settings. To change your printer to ignore the reset code, enter the Menu Mode, go to the Set-Up group and change the setting for Reset Inhibit to YES. The I-Prime signal will automatically override any front panel settings you have made. To eliminate this problem, enter the Menu Mode, go to the Parallel Interface group and change the setting for I-Prime to Invalid. For more information on changing menu settings, see "Changing the menu settings" on page 42.
Nothing happens when I turn ON the printer.	Check the power cord connection to the outlet and to the printer. If you are using a power strip, make sure it is turned ON, and that the fuse hasn't blown or that the circuit breaker hasn't tripped.
The printer does not print when the computer sends data.	1. Is the SEL light on? If not, press the SEL key. 2. Check that the interface cable is securely connected to both the printer and the computer. 3. If you have the optional serial interface board installed, check to be sure that it is firmly seated in the printer.
I'm getting strange symbols, incorrect fonts, etc., when I try to print a document.	1. Check to be sure that the printer driver you have selected in your software matches the printer emulation. 2. Press SHIFT and SEL keys, then press GROUP key. This will print a line showing the emulation you have selected. 3. If you have embedded any printer commands in your software, check to be sure that you entered them correctly

PROBLEM	SOLUTION
Ink smears on the paper when I print narrow columns.	This may be caused by excessive printhead travel from the centering position. Enter the Menu and set the Centering Position to MODE 1. See "Using Your Printer, Menu Mode." For the wide-carriage printer, if MODE 1 doesn't work, try setting the Centering Position to MODE 2.
I've installed a new ribbon and the printing is smeared and streaked.	The ribbon shield (1) is either loose or missing.  Remove the ribbon cartridge and check the ribbon shield. > If it is loose, secure it. > If it is missing, find it and install it.
There are dots missing in my printouts.	The head gap may not be set correctly. Try moving the headgap lever.
The ALARM light is flashing.	Try turning the printer OFF and then back ON again. If the light still blinks, call for service.
The ALARM light is ON and the Character Pitch 10 light is flashing.	This indicates that the paper lever is set at the wrong position for the paper you are trying to use. Move it to the proper setting.
The ALARM light is ON and the Character Pitch 15 light is flashing.	This indicates a paper jam. Press the SEL key and correct the paper jam situation. See "Clearing paper jams" on page 58.
The printer needs paper. The ALARM is not ON and I can't load paper.	1. Press and release the SEL key. 2. Press and hold the SHIFT key and press the RESET/ CHARACTER PITCH key. The ALARM light illuminates and you can now load paper.
Continuous form paper sticks to the sheet guide.	In cold dry weather, static charges can build up and make the paper cling to the sheet guide. Try moving the paper guides together so that the paper rests on the guides rather than on the separator.
The Print Quality and Character Pitch keys on the front panel don't work.	The Operator Panel Function in the printer menu can be used to disable these buttons (Limited Function). If the printer is part of a customized system or if it is used by a number of people, the system manager may have used this option to make sure the printer is always set properly. Check with your system manager before changing any menu settings.

PARTS AND ACCESSORIES

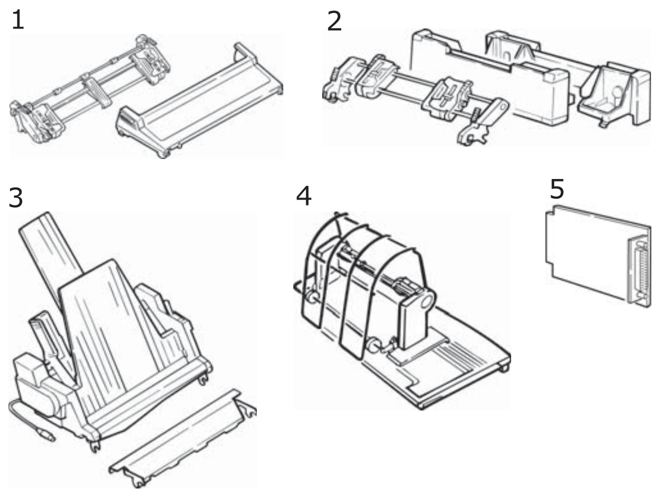
Purchasing Parts & Accessories

Before you purchase parts and accessories, make a note of your printer model number (see the front of the unit) and have the correct part number and description of the item you wish to purchase.



1. **1.** Ribbon Cartridge
2. **2.** Platen Knob
3. **3.** Power Cord (UK, Euro)
4. **4.** Printhead
5. **5.** Access Cover
6. **6.** Sheet Guide
7. **7.** Pull-up Roller Assembly

Installation instructions are supplied with the accessories.



1. Pull Tractor, Top-Mount

2. Push Tractor, Bottom-Mount

3. Cut Sheet Feeder Single Bin

or

Cut Sheet Feeder Double Bin (ML5520ECO/ML5590ECO)

4. Roll Paper Stand (ML5520ECO/ML5590ECO)

5. Serial Interface RS-232C

or

100BASE-TX/10BASE-T Network Interface

SPECIFICATIONS

MODEL	MODEL NUMBER
ML5520ECO	D22900B
ML5521ECO	D22910B
ML5590ECO	D22920B
ML5591ECO	D22930B

ITEM	SPECIFICATION
Print Method	Impact dot matrix
Printhead ML5520ECO/ML5521ECO ML5590ECO/ML5591ECO	 9 pins, 0.30 mm diameter, thermal protection 24 pins, 0.20 mm diameter, thermal protection
Dimensions (W x D x H) (Without platen knob, acoustic cover and paper separator) ML5520ECO/ML5590ECO ML5521ECO/ML5591ECO	 398 x 345 x 120 mm 552 x 345 x 120 mm
Weight ML5520ECO/ML5590ECO ML5521ECO ML5591ECO	 5.9 kg 7.7 kg 7.8 kg
Power Rating Voltage Frequency	 220 - 240V ± 10% 50/60 Hz ± 2%
Power Consumption (Without options attached) **ML5520ECO/ML5521ECO** Operation Powersave mode **ML5590ECO/ML5591ECO** Operation Powersave mode	 Typ. 51W (ISO/IEC10561/Letter/Draft/Range 1) Max. 2.0W Typ. 60W (ISO/IEC10561/Letter/Draft/Range 1) Max. 2.0W
Environmental Requirements	Operating Temperature: 5 to 35C Storage Temperature: -10 to +50C Operating Humidity: 20 to 80%RH (max. wet bulb temp. 30C) Storage Humidity: 5 to 95%RH (max. wet bulb temp. 40C)
Noise Level	The acoustic noise of this product is less than 56dB(A) as measured in accordance with EN ISO7779

Specifications subject to change without notice.

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